AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 | 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0002	06-Sep-2002	W22W9K-2137-3365	

6. ISSUED BY CODE DACA27

USA ENGINEER DISTRICT, LOUISVILLE
ATTN: CELRL-CT
600 DR. MARTIN LUTHER KING PLACE
ROOM 821
LOUISVILLE KY 40202

7. ADMINISTERED BY (If other than item 6) CODE DACA27

PROCUREMENT BRANCH
ATTN: LISA M. FRAZIER
P. O. BOX 59
LOUISVILLE KY 40201-0059

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)

CODE FACILITY CODE

X	9A. AMENDMENT OF SOLICITATION NO. DACA27-02-B-0009
X	9B. DATED (SEE ITEM 11) 17-Jun-2002
	10A. MOD. OF CONTRACT/ORDER NO.
	10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [ ] is extended, [X] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

Solicitation No. DACA27-02-B-0009 for the Multi-Purpose Digital Training Range at Fort Knox, Kentucky, is hereby amended as follows:

SEE ATTACHED

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 06-Sep-2002

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

1. Section 00800 of the solicitation is hereby deleted in its entirety and replaced with the attached Section 00800.

2. General Wage Decision No. KY020027 dated 7/5/2002 contained in Section 00800 is hereby deleted in its entirety and replaced with General Wage Decision No. KY020027 dated 8/16/2002.

3. Specification Section 01355 of the solicitation is hereby deleted in its entirety and replaced with the attached Specification Section 01355.

4. Specification Section 02220a of the solicitation is hereby deleted in its entirety and replaced with the attached Specification Section 02220a.

5. Specification Section 02230a of the solicitation is hereby deleted in its entirety and replaced with the attached Specification Section 02230a to include Appendix A & B – Burn Plan is substituted therefore. Appendix A to Section 02230a is for the UXO surface clearing burn to be conducted at Ft. Knox. The contractor responsibilities under this burn include those items listed in Items 5 and 12.

6. Specification Section 02930a of the solicitation is hereby deleted in its entirety and replaced with the attached Specification Section 02930a.

7. Specification Section 08330a of the solicitation is hereby deleted in its entirety and replaced with the attached Specification Section 08330a.

8. **RESPONSES TO CONTRACTOR QUESTIONS FROM 5 SEPTEMBER 2002 SITE VISIT ARE ATTACHED.**

9. The following CONTRACT DRAWINGS shall be deleted in their entirety, and CONTRACT DRAWINGS with the same sheet reference numbers shall be substituted therefore:

   Sheet A-05
   Sheet E-51
   Sheet E-56

10. The Bid Opening date remains 18 September 2002 at 3:00 p.m. local time.

11. This Amendment MUST be acknowledged as indicated in Item No. 11.

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SECTION 00800

SPECIAL CLAUSES

PART 1 GENERAL

1.1 REFERENCES - NOT USED

1.2 SUBMITTALS

Government approval/acceptance is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Small Tool Usage Plan

Labor, Equipment and Material Reports

Pollution Prevention Plan; G

Bar Chart with S Curve; G

Quality Control Plan; G,

SD-05 Design Data

Equipment-in-Place List; G

Maintenance and Parts Data; G

SF1413; G

Local Agency Check

Aggregate Sources; G

Notice of Soil Treatment; G

Progress Photographs; G

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Construction and Demolition (C&D) Waste Management Plan; G

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Warranties; G

Insurance; G

DA Form 3337; G

SD-11 Closeout Submittals

As-Built Drawings; G

Mechanical Room Layout; G

1.3 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10.

The Contractor shall be required to commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, prosecute said work diligently, and complete the entire work ready for use not later than 1095 calendar days after date of receipt of notice to proceed. The time stated for completion shall include as-built drawings, O&M manuals, operational tests/reports/training/instructions, equipment lists, and final cleanup of the premises.

1.4 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000) FAR 52.211-12.

a. If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $2,380.00 for each calendar day of delay until the work is completed or accepted.

b. If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

1.5 TIME EXTENSIONS (SEPT 2000) FAR 52.211-13

Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The change order also may provide for an equitable readjustment of liquidated damages under the new completion schedule.

1.6 NOT USED.

1.7 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000) DFARS 252.236-7001
19 Sept 2000

[Version 2] (May 2002)

a. At award, the Government will furnish the Contractor a compact disk containing all technical contract documents. This disk will include a complete set of drawing files and technical specification files which have all amendments incorporated. The disk will contain drawing files in CALS Type 4 format and technical specifications in PDF format.

The CALS files and the PDF files are being provided for the Contractor's use in printing hard copies of contract documents.

In addition, native CADD files and Specsintact files are provided in accordance with "AS-BUILT DOCUMENTS" paragraph for the Contractor's use in developing as-built plans and specifications.

b. The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors which might have been avoided by complying with paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

c. Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

d. The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

TABLE OF DRAWINGS

Drawing No.	Title (followed by drawing code if	Latest Rev. No. & Date

different from that
shown above)

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E-30	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-31	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-32	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-33	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-34	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-35	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-36	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-37	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-38	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-39	ELECTRICAL SITE PLAN DATA SYSTEM DISTRIBUTION
E-40	AMTC EMPLACEMENT AND DETAILS

E-41	EMPLACEMENT DETAILS	
E-42	POWER DISTRIBUTION SINGLE LINE DIAGRAM	
E-43	POWER DISTRIBUTION SINGLE LINE DIAGRAM	
E-44	SINGLE LINE DIAGRAM	
E-45	DATA SYSTEM SINGLE LINE DIAGRAM	
E-46	PANEL SCHEDULES	
E-47	PANEL SCHEDULES	
E-48	ELECTRICAL LEGEND AND FIXTURE SCHEDULES	
E-49	LIGHT FIXTURE DETAILS	
E-50	LIGHT FIXTURE DETAILS	
E-51	ELECTRICAL BUILDING PLANS	Rev 1, 9/4/02
E-52	ELECTRICAL DETAILS	
E-53	ELECTRICAL DIAGRAMS	
E-54	ELECTRICAL BUILDING PLANS	
E-55	ELECTRICAL BUILDING PLANS	Rev 1, 9/4/02
E-56	PANEL SCHEDULES	

1.8 AS-BUILT DOCUMENTS
3 November 1998 (Version 1)

1.8.1 General.

This section covers the completion of as-built drawings and as-built specifications, as a requirement of the contract.

1.8.1.1 As-Built Drawings

An as-built drawing is a construction drawing revised to reflect the final as-built conditions of the project because of modifications, changes, corrections to the project design required during construction, submittals and extensions of design. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings that are revised to be used for the "RECORD DRAWING AS-BUILTS".

1.8.1.2 As-Built Specifications:

As-built specifications are the construction specifications as modified by changes (contract mods, ACO approved variations from the construction specifications which did not result in contract mods).

1.8.2 Maintenance of Working As-Built Drawings

The Contractor shall revise 2 sets of paper prints by red-line process to show the as-built conditions during the prosecution of the project. These as-built marked prints shall be kept current on a weekly basis and available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Changes must be reflected on all sheets affected by the change. The working as-built marked prints will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor before submission of each monthly

pay estimate. The working as-built drawings shall show the following information, but not be limited thereto:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

b. The location and dimensions of any changes within the building structure.

c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

d. Additional as-built information that exceeds the detail shown on the Contract Drawings. These as-built conditions include those that reflect structural details, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations and layouts, equipment, sizes, mechanical room layouts and other extensions of design, that were not shown in the original contract documents because the exact details were not known until after the time of approved shop drawings. It is recognized that these shop drawing submittals (revised showing as-built conditions) will serve as the as-built record without actual incorporation into the contract drawings. All such shop drawing submittals must include, along with the hard copy of the drawings, CADD files of the shop drawings in a commercially available digital format, compatible with the Using Agency System (see paragraph "Computer Aided Design and Drafting (CADD) Drawings"). All shop drawings which require submittal of CADD files are indicated in the submittal register located at the end of this section.

e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

f. Changes or modifications which result from the final inspection.

g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.

h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.

i. If fire protection and fire detection related systems are included in this project, the as-built drawings will include detailed information for all aspects of the systems including wiring, piping, and equipment drawings.

The Contractor will be provided files at the beginning of construction for use during the construction phase which are to be maintained during construction and for the preparation of as-builts. The Contractor shall enter changes and corrections on blue line prints on a weekly basis in accordance with Paragraph "Maintenance of Working As-Built Drawings" and update the CADD as-built drawings on a monthly basis. Both paper and electronic documents shall be available at all times and shall be provided promptly to the Contracting Officer when requested. The Contractor shall be responsible for backup of electronic files during construction and for controlling release of information.

1.8.3 Retainage

The Contractor shall include in his schedule of values, the cost of as-built document preparation. This value shall include all requirements of this clause:

Maintenance of working as-built drawings
Maintenance of working as-built specifications
Conversion of submittals and other miscellaneous documents into electronic files
Creation of "Record As-Built Drawings & Specifications" (either by CADD dwgs and Specsintact specifications or by manually prepared documents as specified herein.)
Creation of a CD containing all required files.
Submittal of as-built documents in the required media forms and numbers of copies

If the Contractor fails to maintain the working as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of bringing the as-built documents up to date. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of working as-built documents.

1.8.4 Preliminary Submittal

Six (6) weeks before occupancy of this facility by the Government, the Contractor shall submit one (1) set of the original working as-built drawings to the Contracting Officer for review and approval. These working as-built marked drawings shall be neat, legible and accurate. The review by Government personnel will be expedited to the maximum extent possible. Upon approval, the working as-built marked drawings will be returned to the Contractor for use in preparation of final as-built drawings. If upon review, the working as-built marked drawings are found to contain errors and/or omissions, they will be returned to the Contractor for corrections. The Contractor shall complete the corrections and return the working as-built marked drawings to the Contracting Officer within 10 calendar days.

1.8.5 Preparation of Final As-Built Drawings

Upon approval of the working as-built prints submittal, the Contractor will be furnished, by the Government, one set of contract drawings with all

amendments incorporated, to be used for final as-built drawings. These contract drawings will be furnished in the format specified in paragraph ["Computer Aided Design and Drafting" (CADD)]. These drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, adding such additional drawings as may be necessary. These drawings are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

In the event the Contractor accomplishes additional work which changes the as-built conditions of the facility, after submission and approval of the working as-built drawings, he shall be responsible for the addition of these changes to the working as-built drawings and also to the final as-built documents.

1.8.6 Markings and Indicators

Changes shall be annotated with a triangle and sequential number at the following locations:

a. bottom of the revised detail
b. right hand and bottom border aligned with the revised detail
c. the revision block of the title block.

Separate markings shall be made for each modification negotiated into the contract.

1.8.7 Preparation of Final As-Built Specifications

Final as-built specifications shall be prepared in Specsintact and the electronic files shall be placed on the same CD-ROM that contains the as-built CADD files, if applicable. The front sheet of the specifications shall contain an identification which clearly labels the specifications as representing as-built conditions and shall be dated with the date of the submittal.

1.8.8 Preparation of Other As-Built Documents

All other non-electronic documents which may include design analysis, catalog cuts, certification documents that are not available in native electronic format shall be scanned and provided in an organized manner in Adobe .pdf format.

1.8.9 Submittal of Final As-Built Documents

Before final inspection the contractor shall turn over to the government for approval th following items: As-Builts, O&M Manuals, Equipment In Place List. Final As-Built documents shall be provided to the Contracting Officer in the formats described in paragraph "Computer Aided Design and Drafting (CADD)".

1.8.10 Partial Occupancy

For projects where portions of construction are to be occupied or activated before overall project completion, including portions of utility systems, as-built drawings for those portions of the facility being occupied or activated shall be supplied at the time the facility is occupied or activated. This same as-built information previously furnished must also be shown on the final set of as-built drawings at project completion.

1.8.11 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality to that of the originals. Line work, line weights, lettering, layering conventions, and symbols shall be the same as the original line work, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same guidance specified for original drawings. Three dimensional (3D) elements shall be placed in files in their proper locations when using 3D files with spatially correct elements. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD media files supplied by the Government. All work by the Contractor shall be done on files in the format in which they are provided. Translation of files to a different format, for the purpose of As-Built production, and then retranslating back to the format originally provided, will not be acceptable. The media files will be supplied by the Contractor to the COR on . The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make all required corrections, changes, additions, and deletions.

a. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "AS-BUILT" drawing denoting no revisions on the sheet or "REVISED AS-BUILT" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

b. Revision markers defined in paragraph "Markings and Indicators" shall be placed as follows:

(1) at the detail, placed in the design file where the revised graphics are located and the revision was placed

(2) right hand and bottom border in the drawing sheet file revision block of the title block in the drawing sheet file.

c. After receipt by the Contractor of the approved working as-built prints and the original contract drawings files the Contractor shall, within 30 calendar days, make the final as-built submittal. This submittal shall consist of 2 sets of completed final

as-built drawings on separate media consisting of both CADD files (compatible with the Using Agency's system on electronic storage media identical to that supplied by the Government) and Mylars; 2 blue line prints of these drawings and the return of the approved marked working as-built prints. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with its CADD system. All paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.8.12 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs in conjunction therewith, shall be considered a subsidiary obligation of the Contractor.

1.9 NOT USED.

1.10 EQUIPMENT DATA

Real Property Equipment.

Contractor shall be required to make an Equipment-in-Place list of all installed equipment furnished under this contract. This list shall include all information usually listed on manufacturer's name plate. The form is part of SPECIAL CLAUSES and is included following the SPECIAL CLAUSES, so to positively identify the piece of property. The list shall also include the cost of each piece of installed property F.O.B. construction site. For each of the items which is specified herein to be guaranteed for a specified period from the date of acceptance thereof, the following information shall be given: The name, serial and model number address of equipment supplier, or manufacturer originating the guaranteed item. The Contractor's guarantee to the Government of these items will not be limited by the terms of any manufacturer's guarantee to the Contractor. Furnish the list as one (1) reproducible and three (3) copies to the Contracting Officer thirty (30) calendar days before completion of any segment of the contract work which has an incremental completion date.

Maintenance and Parts Data.

The Contractor will be required to furnish a brochure, catalog cut, parts list, manufacturer's data sheet or other publication which will show detailed parts data on all other equipment subject to repair and maintenance procedures not otherwise required in Operations and Maintenance Manuals specified elsewhere in this contract. Distribution of directives shall follow the same requirements as listed in paragraph above.

1.11 PHYSICAL DATA (APR 1984) FAR 52.236-4.

Data and information furnished or referred to below is furnished for the Contractor's information. The Government will not be responsible for any interpretation or conclusion drawn from the data or information by the Contractor.

Physical Conditions indicated on the drawings and in the specifications are the result of site investigations

Weather Conditions. The Contractor shall make his own investigations as to weather conditions at the site. Data may be obtained from various National Weather Service offices located generally at airports of principal cities, the nearest to this project being:

Louisville International Airport
Regional Airport Authority
Louisville, Ky 502-368-6524

Historical data for all areas may be obtained from:

U. S. Department of Commerce
National Climatic Center
Federal Building
Asheville, N. C. 28801

Transportation Facilities. Roads and railroads in the general area are shown on the drawings. Access ways shall be investigated by the Contractor to satisfy himself as to their existence and allowable use.

1.12 UTILITIES (APR 1984) FAR 52.236-14 (Para. 1.12.a.(1) & 1.12.a.(2) only).

a. Availability and Use of Utility Services

(1) The Government will make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(2) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges.

b. Alterations to Utilities

Where changes and relocations of utility lines are noted to be performed by

others, the Contractor shall give the Contracting Officer at least thirty (30) days written notice in advance of the time that the change or relocation is required. In the event that, after the expiration of thirty (30) days after the receipt of such notice by the Contracting Officer, such utility lines have not been changed or relocated and delay is occasioned to the completion of the work under contract, the Contractor will be entitled to a time extension equal to the period of time lost by the Contractor after the expiration of said thirty (30) day period. Any modification to existing or relocated lines required as a result of the Contractor's method of operation shall be made wholly at the Contractor's expense and no additional time will be allowed for delays incurred by such modifications.

c. Interruptions of Utilities

(1) No utility services shall be interrupted by the Contractor to make connections, to relocate, or for any purpose without approval of the Contracting Officer.

(2) Request for Permission to shut down services shall be submitted in writing to the Contracting Officer not less than seventeen (17) days before date of proposed interruption. The request shall give the following information:

(a) Nature of Utility (Gas, L.P. or H.P., Water, etc.)

(b) Size of line and location of shutoff;

(c) Buildings and services affected.

(d) Hours and date of shutoff.

(e) Estimated length of time services will be interrupted.

(3) Services shall not be shutoff until receipt of approval of the proposed hours and date from the Contracting Officer.

(4) Shutoffs which will cause interruption of Government work operations as determined by the Contracting Officer shall be accomplished during regular non-work hours or on non-work days of the Using Agency without any additional cost to the Government.

(5) Operation of valves on water mains will be by Government personnel. Where shutoff of water lines interrupts service to fire hydrants or fire sprinkler systems, the Contractor shall arrange his operations and have sufficient material and personnel available to complete the work without undue delay or to restore service without delay in event of emergency.

(6) Flow in gas mains which have been shut off shall not be restored until the Government inspector has determined that all items serviced by the gas line have been shut off.

1.13 NOT USED

1.14 LAYOUT OF WORK (APR 1984) FAR 52.236-17

The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at his own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

1.15 LINES, GRADES AND LIMITS

The Contractor shall be responsible for all layout required to properly control the work under this contract as determined by the Contracting Officer. The Contractor shall also furnish at his own expense, all string line, nails, and materials and labor as may be required in laying out the work.

1.16 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984) FAR 52.236-1

The Contractor shall perform on the site, and with its own organization, work equivalent to at least 20 percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

a. For purposes of this paragraph "WORK BY THE CONTRACTOR" is defined as prime Contractor direct contract labor (including testing and layout personnel), exclusive of other general condition or field overhead personnel, material, equipment, or subcontractors. The "TOTAL AMOUNT OF WORK" is defined as total direct contract labor (including testing and layout personnel), exclusive of other general condition or field overhead personnel, material, or equipment.

b. Within 7 days after the award of any subcontract, either by himself or a subcontractor, the Contractor shall deliver to the Contracting Officer a completed SF 1413, "Statement and Acknowledgment." The form shall include the subcontractor's acknowledgement of the inclusion in his subcontract of the clauses of this contract entitled "Davis-Bacon Act," "Contract Work Hours and Safety Standards Act-Overtime Compensation," "Apprentices and Trainees," "Compliance with Copeland Regulations," "Withholding of Funds," "Subcontracts," "Contract Termination-Debarment," and "Payrolls and Basic Records." Nothing contained in this contract shall create any contractual relation between the subcontractor and the Government.

1.17 SUPERINTENDENCE OF SUBCONTRACTORS

a. The Contractor shall be required to furnish the following, in addition to the superintendence required by CONTRACT CLAUSE: SUPERINTENDENCE BY THE CONTRACTOR.

(1) If more than 50 percent and less than 70 percent of the value of the contract work is subcontracted, one superintendent shall be provided at the site and on the Contractor's payroll to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

(2) If 70 percent or more of the value of the work is subcontracted, the Contractor shall be required to furnish two such superintendents to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

b. If the Contracting Officer, at any time after 50 percent of the subcontracted work has been completed, finds that satisfactory progress is being made, he may waive all or part of the above requirements for additional superintendence subject to the right of the Contracting Officer to reinstate such requirement if at any time during the progress of the remaining work he finds that satisfactory progress is not being made.

1.18 IDENTIFICATION OF EMPLOYEES.

a. The Contractor shall be responsible for furnishing an identification badge/card to each employee prior to the employees work on-site, and for requiring each employee engaged on the work to display identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of the employee. When required by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project.

1.19 NOT USED.

1.20 WARRANTY OF CONSTRUCTION (MAR 1994) ALTERNATE 1 (APR 1984) FAR 52.246-21I.

a. General Requirements

(1) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph 1.20.a.(9) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(a) Warranty Payment: Warranty work is a subsidiary portion of the contract work, and has a value to the Government approximating 1% of the contract award amount. The Contractor will assign a value of that amount in the breakdown for progress payments mentioned in the Contract Clause: Payments Under Fixed-Price Construction Contracts. If the Contractor fails to respond to warranty items as provided in paragraph 1.20.5, the

Government may elect to acquire warranty repairs through other sources and, if so, shall backcharge the Contractor for the cost of such repairs. Such backcharges shall be accomplished under the Changes Clauses of the contract through a credit modification(s).

(2) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(a) As a part of the one year warranty inspection, the Contracting Officer will conduct an infrared roof survey on any project involving a membrane roofing system. This survey will be conducted in accordance with ASTM C1153-90, "Standard Practice for Location of Wet Insulation in Roofing Systems Using Infrared Imaging". In accordance with paragraph 1.20.a.(3) and 1.20.a.(4) below, the Contractor shall be required to replace all damaged materials and to locate and repair sources of moisture penetration.

(3) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(a) The Contractor's failure to conform to contract requirements; or

(b) Any defect of equipment, material, workmanship, or design furnished.

(4) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(5) The Contracting Officer shall notify the Contractor, in writing, (see para. 1.20.b.(3) and 1.20.e) within a reasonable time after the discovery of any failure, defect, or damage.

(6) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, (see para. 1.20.5) the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(7) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(a) Obtain all warranties that would be given in normal commercial practice;

(b) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(c) Provide names, addresses, and telephone numbers of all subcontractors, equipment suppliers, or manufacturers with specific designation of their area of responsibilities if they are to be contacted directly on warranty corrections; and

(d) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(8) In the event the Contractor's warranty under paragraph of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(9) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(10) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(11) Defects in design or manufacture of equipment specified by the Government on a "brand name and model" basis, shall not be included in this warranty. In this event, the Contractor shall require any subcontractors, manufacturers, or suppliers thereof to execute their warranties, in writing, directly to the Government.

b. Performance Bond

(1) The Contractor's Performance Bond will remain effective throughout the construction warranty period and warranty extensions.

(2) In the event the Contractor or his designated representative(s) fails to commence and diligently pursue any work required under this clause, and in a manner pursuant to the requirements thereof, the Contracting Officer shall have a right to demand that said work be performed under the Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Performance Bond, the Contracting Officer shall have the work performed by others, and after completion of the work, may make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

(3) Following oral or written notification of required warranty repair work, the Contractor will respond as dictated by para. 1.20.e. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Contracting Officer to proceed against the Contractor as outlined in the paragraph 1.20.b.(2) above.

c. Pre-Warranty Conference

Prior to contract completion and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop

a mutual understanding with respect to the requirements of this clause. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warrantied construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of his responsibilities in connection with other portions of this provision.

d. Equipment Warranty Identification Tags

(1) The Contractor shall provide warranty identification tags on all Contractor and Government furnished equipment which he has installed.

(a) The tags shall be similar in format and size to the exhibits provided by this specification, they shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

(b) Sample tags shall be submitted for Government review and approval. These tags shall be filled out representative of how the Contractor will complete all other tags.

(c) Tags for Warrantied Equipment: The tag for this equipment shall be similar to the following. Exact format and size will be as approved.

EQUIPMENT WARRANTY
CONTRACTOR FURNISHED EQUIPMENT

MFG MODEL NO.

SERIAL NO.

CONTRACT NO.

CONTRACTOR NAME

CONTRACTOR WARRANTY EXPIRES

MFG WARRANTY(IES) EXPIRE

EQUIPMENT WARRANTY
GOVERNMENT FURNISHED EQUIPMENT

MFG MODEL NO.

SERIAL NO.

CONTRACT NO.

DATE EQUIP PLACED IN SERVICE

MFG WARRANTY(IES) EXPIRE

(d) If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag. The Contractor warranty expires (warranty expiration date) and the final manufacturer's warranty expiration date will be determined as specified by para. 1.20.1.

(2) Execution. The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment.

(3) Payment. The work outlined above is a subsidiary portion of the contract work, and has a value to the Government approximating 5% of the value of the Contractor furnished equipment. The Contractor will assign a value of that amount in the breakdown for progress payments mentioned in the Contract Clause: PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS.

(4) Equipment Warranty Tag Replacement. As stated in para. 1.20.1.4, the Contractor's warranty with respect to work repaired or replaced shall run for one year from the date of repair or replacement. Such activity shall include an updated warranty identification tag on the repaired or replaced equipment. The tag shall be furnished and installed by the Contractor, and shall be identical to the original tag, except that the Contractor's warranty expiration date will be one year from the date of acceptance of the repair or replacement.

e. Contractor's Response to Warranty Service Requirements. Following oral or written notification by the Contracting Officer or an authorized representative of the installation designated in writing by the Contracting Officer, the Contractor shall respond to warranty service requirements in accordance with the "Warranty Service Priority List" and the three categories of priorities listed below.

First Priority Code 1 Perform on site inspection to evaluate situation, determine course of action, initiate work within 24 hours and work continuously to completion or relief.

Second Priority Code 2 Perform on site inspection to evaluate situation, determine course of action, initiate work within 48 hours and work continuously to completion or relief.

Third Priority Code 3 All other work to be initiated within 5 work days and work continuously to completion or relief.

The "Warranty Service Priority List" is as follows:

Code 1 Air Traffic Control and Air Navigation Systems and Equipment.

Code 1 Air Conditioning System
- a. Hospital.
- b. Buildings with computer equipment.
- c. Commissary and Main PX.
- d. Clubs.
- e. Barracks, mess halls, BOQ/BEQ (entire building down).
- f. Troop medical and dental.

Code 2 Air Conditioning Systems
- a. Recreational support.
- b. Air conditioning leak in part of building, if causing damage.
- c. Admin buildings with ADP equipment not on priority list.

Code 1 Doors
- a. Overhead doors not operational.

Code 1 Electrical
- a. Power failure (entire area or any building operational after 1600 hours).
- b. Traffic control devices.
- c. Security lights.

Code 2 Electrical
- a. Power failure (no power to a room or part of building).
- b. Receptacle and lights.
- c. Fire alarm systems.

Code 1 Gas
- a. Leaks and breaks.
- b. No gas to family housing unit or cantonment area.

Code 1 Heat
- a. Hospital/Medical facilities.
- b. Commissary and Main PX.
- c. Clubs.
- d. Area power failure affecting heat.

Code 2 Heat
- a. Medical storage.
- b. Barracks.

Code 1 Intrusion Detection Systems
Finance, PX and Commissary, and high security areas.

Code 2 Intrusion Detection Systems
Systems other than those listed under Code 1.

Code 1 Kitchen Equipment
a. Dishwasher.
b. All other equipment hampering preparation of a meal.

Code 2 Kitchen Equipment
All other equipment not listed under Code 1.

Code 2 Plumbing
a. Flush valves.
b. Fixture drain, supply line commode, or water pipe leaking.
c. Commode leaking at base.

Code 1 Refrigeration
a. Commissary.
b. Mess Hall.
c. Cold Storage.
d. Hospital.
e. Medical storage.

Code 2 Refrigeration
Mess hall - other than walk-in refrigerators and freezers.

Code 1 Roof Leaks
Temporary repairs will be made where major damage to property is occurring.

Code 2 Roof Leaks
Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 1 Swimming Pools
Chlorine leaks or broken pumps.

Code 1 Tank Wash Racks (Bird Baths)
All systems which prevent tank wash.

Code 1 Water (Exterior)
Normal operation of water pump station.

Code 2 Water (Exterior)
No water to facility.

Code 1 Water, Hot (and Steam)
a. Hospitals.
b. Mess halls.

c. BOQ, BEQ, barracks (entire building).
d. Medical and dental.

Code 2 Water, Hot
No hot water in portion of building listed under Code 1 (items a through c).

Code 1 Sprinkler System
All sprinkler systems, valves, manholes, deluge systems, and air systems to sprinklers.

(1) Should parts be required to complete the work and the parts are not immediately available, the Contractor shall have a maximum of 12 hours after arrival at the job site to provide the Contracting Officer or an authorized representative of the installation designated in writing by the Contracting Officer, with firm written proposals for emergency alternatives and temporary repairs for Government participation with the Contractor to provide emergency relief until the required parts are available on site for the Contractor to perform permanent warranty repair. The Contractors proposals shall include a firm date and time that the required parts shall be available on site to complete the permanent warranty repair. The Contracting Officer or an authorized representative of the installation designated in writing by the Contracting Officer, will evaluate the proposed alternatives and negotiate the alternative considered to be in the best interest of the Government to reduce the impact of the emergency condition. Alternatives considered by the Contracting Officer or an authorized representative of the installation designated in writing by the Contracting Officer will include the alternative for the Contractor to "Do Nothing" while waiting until the required parts are available to perform permanent warranty repair. Negotiating a proposal which will require Government participation and the expenditure of Government funds shall constitute a separate procurement action by the using service.

1.21 NOT USED.

1.22 NOT USED.

1.23 SALVAGE MATERIALS AND EQUIPMENT.

The Contractor shall maintain adequate property control records for all materials or equipment specified in Section 02220 to be salvaged. These records may be in accordance with the Contractor's system of property control, if approved by the property administrator. The Contractor shall be repsonsible for the adequate storage and protection of all salvaged materials and equipment which are broken or damaged during salvage operations as the result of his negligence, or while in his care.

1.24 NOT USED.

1.25 AGGREGATE SOURCES

General. Aggregates can be produced from the sources listed below.

(1) Kentucky Stone Co., Irvington, Kentucky, Ledges 1A, 2A, 3A,

4A, and 20 to 22'.

(2) Medusa Stone Company, Bardstown, Kentucky, Ledges 1T, 2T, 3 and 50'.

(3) Vulcan Materials Co., Elizabethtown, Kentucky, Plant #1, Ledges 1 through 7, about 50'.

(4) Quality Crushed Stone Company, Shepherdsville, Kentucky, edges 1T, 1 through 8, about 100'.

(5) Bullitt County Stone Company, Shepherdsville, Kentucky, Ledges 1T, 1 through 8, about 100'.

(6) Mulzer Stone Company, Charlestown, Indiana, Ledges 1 through 5, about 100'.

Aggregates may be furnished from any of the above listed sources or at the option of the Contractor may be furnished from any other source designated by the Contractor and approved by the Contracting Officer, subject to the conditions hereinafter stated.

Source. After the award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish aggregates. If the Contractor proposes to furnish aggregates from a source or from sources not listed above, he may designate only a single source or single combination of sources for aggregates. Samples for acceptance testing shall be provided as required by the technical portions of these specifications. If a source for coarse or fine aggregate so designated by the Contractor is not approved for use by the Contracting Officer, the Contractor may not submit for approval other sources, but shall furnish the coarse or fine aggregate, as the case may be, from a source listed above at no additional cost to the Government.

Listing of a concrete aggregate source is not to be construed as approval of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for concrete aggregate as determined by the Contracting Officer. Materials produced from an approved source shall meet all requirements of the technical portions of these specifications.

1.26 PROJECT SIGN

Version 2 General. The Contractor shall furnish and erect at the location directed one project sign.

Exact placement location will be designated by the Contracting Officer. The panel sizes and graphic formats have been standardized for visual consistency throughout all Corps operations.

Panels are fabricated using HDO plywood with dimensional lumber uprights and bracing.

All legends are to be painted in the sizes and styles as specified by the

graphic formats shown at the end of this section. The signs (including back and edges), posts and braces shall be given two coats of Benjamin Moore No. 120-60 poly-silicone enamel or approved equal before lettering. The 4' x 4' right section of the project sign shall be white with black lettering. Paint colors shall be as follow:

Black - Federal Standard 595a Color Number 27038
White - Federal Standard 595a Color Number 27875
Red - PANTONE 032

An example of the sign including mounting and fabrication details are also provided at the end of this section.

Name of the project shall be as follows:

Multi-Purpose Digital Training Range
Fort Knox, Kentucky

Name of the designer shall be as follows:

Polyengineering, Inc.
Dothan, Alabama

Erection and Maintenance.

a. The signs shall be erected at the designated location(s). Signs shall be plumb and backfill of post holes shall be well tamped to properly support the signs in position throughout the life of the contract. The signs shall be maintained in good condition until completion of the contract, shall remain the property of the Contractor, and shall be removed from the site upon completion of work under the contract.

b. The Corps of Engineers logo will be provided by the Contracting Officer.

Payment. No separate payment will be made for furnishing and erecting the project signs as specified and costs thereof shall be considered a subsidiary obligation of the Contractor.

1.27 NOT USED

1.28 WAGE RATES

The decision of the Secretary of Labor, covering rates of wages, including fringe benefits to be paid laborers and mechanics performing work under this contract, is attached hereto. The payment for all classes of laborers and mechanics actually employed to perform work under the contract will be specified in the following contract clauses: DAVIS-BACON ACT, CONTRACT WORK HOURS AND SAFETY STANDARDS ACT, and THE COPELAND ACT.

Wage decisions included are KY020027.

1.29 PURCHASE ORDERS

Five copies of all purchase orders, for items requiring shop inspection, showing firm names and addresses, shall be submitted to the Contracting Officer when orders for materials are placed. Orders shall be so worded or marked that each item, piece or member can be definitely identified on the drawings. Purchase prices are not necessary and may be obliterated from the copies of the purchase orders furnished.

1.30 INTERFERENCE WITH TRAFFIC AND PUBLIC AND PRIVATE PROPERTY.

a. The Contractor at all times shall dispose his plant and conduct the work in such manner as to cause as little interference as possible with private and public travel. Damage (other than that resulting from normal wear and tear) to roads, shall be repaired to as good a condition as they were prior to the beginning of work and to the satisfaction of the Contracting Officer.

b. The Contractor shall provide and maintain as may be required by the State of Kentucky, Department of Transportation, proper barricades, fences, danger signals and lights, provide a sufficient number of watchmen, and take such other precautions as may be necessary to protect life, property and structures, and shall be liable for and hold the Government free and harmless from all damages occasioned in any way by his act or neglect, or that of his agents, employees, or workmen.

1.31 NOT USED.

1.32 GOVERNMENT FIELD OFFICE FACILITIES AND SERVICES.

1.32.1 General

The Government field office facilities will be located as indicated and specified in the technical portions of these specification. Electrical, fuel, water, and sewage disposal facilities shall be provided as specified in the technical portions of these specifications and shall be maintained by the Contractor for the duration of the contract. All electricity, two (2)telephone lines and fuel oil required for operation of the field office facilities shall be furnished by the Contractor for the duration of the contract. **[AM#2]The field office shall be equipped with shower facilities. The Contractor shall provide and maintain for the duration of the contract two (2) 4 x 4 Gator or Mule type ATVs or equal equipped with roll bars and seat belts with seating for driver and passenger.** The Contractor shall service the ATVs and turn over to the Government at the end of the contract. No separate payment will be made for maintaining the facilities and furnishing these utilities and all costs in connection therewith shall be included in other items authorized for payment. The buildings and facilities will be left in place upon completion of the contract.

1.32.2 Utility Services

The Contractor shall arrange for and pay all costs for water and port-a-pot as necessary for the field office. The existing equipment shall be cleaned and then services a minimum of biweekly.

1.32.3 Janitor Service

The Contractor shall furnish biweekly janitorial services, for the Government office and laboratory and perform normal maintenance of these facilities and grounds as deemed necessary by the Contracting Officer starting on or date of Notice to Proceed and continuing for the life of the contract. The supply of all cleaning equipment and materials shall be the responsibility of the Contractor. Toilet facilities shall be kept clean and sanitary at all times. Toilet paper, hand soap, parper towels, and other materials the Contracting Officer determines necessary to provide sanitary facilities shall be furnished by the Contractor. Services shall be performed at such a time and in such a manner to least interfere with the operations, but will be accomplished during normal working hours. Services shall be accomplished to the satisfaction of the Contracting Officer. The Contractor shall also provide daily trash collection and cleanup of the Government buildings and adjacent outside areas, snow and ice removal from office and parking ares, and mowing of grass at least weekly in season, and shall dispose of all discarded debris, aggregate samples and concrete test samples, all in manner approved by the Contracting Officer.

1.32.4 Payment

No separate payment will be made for these Contractor-furnished services, and all costs thereof shall be incidental to the various bid items of the contract.

1.33 COMPLIANCE WITH POST/BASE REGULATIONS.

a. The site of the work is on a military reservation and all rules and regulations issued by the Commanding Officer covering general safety, security, sanitary requirements, pollution control and traffic regulations, shall be observed by the Contractor. Information regarding these requirements may be obtained by contacting the Contracting Officer, who will provide such information or assist in obtaining same from appropriate authorities.

b. Contractor personnel shall park only in areas authorized by the Contracting Officer.

c. The Contractor shall provide a Seven Day Notice of Soil Treatment to the Contracting Officer, in writing, before required soil treatment agents are applied, to assure that DOD Certified Pest Control Personnel are present during soil treatment applications. All soil treatment applications must be in the presence of DOD Certified Pest Control personnel.

1.34 EQUIPMENT AND OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995) EFAR 52.231-5000.

a. This does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

b. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region II. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time of negotiations shall apply.

c. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

d. When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the Contracting Officer shall request the Contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Cover Sheet.

e. Whenever a modification or equitable adjustment of contract price is required, the contractor's cost proposals for equipment ownership and operating expenses shall be determined in accordance with the requirements of SPECIAL CONTRACT REQUIREMENT: EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE. A copy of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense Schedule" is available for review at the office of the District Engineer, Room 821, 600 Dr. Martin Luther King, Jr. Place, Louisville, Kentucky, or a copy may be ordered from the Government Printing Office at a cost of $11.00 by calling telephone no. (301) 953-7974.

Address to Order: U.S. Government Printing Office
Document Warehouse
8160 Cherry Lane
Laurel, MD 20707

Vol No.	Stock No.
1	008-022-00254-5
2	008-022-00255-3
3	008-022-00256-1

4	008-022-00257-0
5	008-022-00258-8
6	008-022-00259-6
7	008-022-00260-0
8	008-022-00261-8
9	008-022-00262-6
10	008-022-00263-4
11	008-022-00264-2
12	008-022-00265-1

1.35 LABOR, EQUIPMENT, AND MATERIAL REPORTS

Daily Equipment Report. The Contractor shall submit a daily report of all Contractor-owned or rented equipment at the jobsite. A similar report is required for all subcontractor equipment. The subcontractor's report may be separate or included with the Contractor's report provided the equipment is adequately identified as to ownership. The required equipment report shall include each item of equipment (hand-operated small tools or equipment excluded) on the job and shall specifically identify each item as to whether it is Contractor-owned or rented, shifts, hours of usage, down time for repairs, and standby time. Identification of the equipment shall include make, model and plant number of all items. Separate identification by a key sheet providing these data may be utilized with the daily report indicating the type of equipment and the equipment plant numbers. The format of the Daily Equipment Report will be as approved by the Government in the field.

Labor, Equipment & Material Reports for Extra Work/Cost. A Report shall also be submitted by the Contractor listing any labor, equipment and materials expended on and/or impacted by any change order directed by the Government and for which total price/time agreement has not been reached. These requirements also apply to subcontractors at any tier. The same Report is required at any time the Contractor claims or intends to claim for extra costs whether or not there is Government recognition (constructive changes). This requirement is in addition to any Contractor "Notice" or "Reservation of Rights". Submittal of such a report will not be construed as satisfying the "Notice" required under the "Changes" clause or any other clause. But, absence of such Reports submitted to the Government contemporaneously with the alleged extra work/cost will be considered as evidence that no such extra work/cost occurred that are chargeable to the Government.

The Report shall be detailed to the degree required by the Government in the field and shall contain the following as a minimum:

a. The cause of the extra labor, equipment or materials costs.

b. For extra labor - Indicate crew, craft, hours, location and cost. Describe nature or type of extra costs, i.e, extra work, overtime, acceleration, interference, reassignment, mobilizations and demobilizations, supervision, overhead, type of inefficiency, etc.

c. For extra equipment - Indicate type and description, hours, location, cost; whether working, idle, standby, under repair, extra work

involved, etc.

d. For extra materials - Indicate type and description, where used, whether consumed, installed or multi-use, quantity, cost, extra work involved, etc.

e. Affected activities - Relate to Contract Schedule (Network Analysis); demonstrate whether delay or suspension is involved.

f. Segregate all entries by prime and each subcontractor.

g. Summarize costs daily and by cumulative subtotal or with frequency required by the Government.

This report will not be considered as evidence that any of the alleged extra costs actually occurred. The report will be used to check against over obligation of funds for change orders directed prior to price/time agreement and to track alleged extra costs the Contractor considers otherwise chargeable against the Government. The Government may respond at any interval to either challenge, amend or confirm the report. Absence of a Government response is not to be considered acquiescence or denial. The Government may order work stoppage if deemed necessary to avoid overobligation of funds. The frequency of the report shall be daily or as otherwise approved by the Government representative in writing.

1.36 SEQUENCE OF WORK.

The waterline along Mt. Eden Church Road from the Ft. Knox boundary to the Zussman Mounted Urban Combat Training Center shall be constructed immediately upon receiving Notice to Proceed and shall be completed within 60 days.

Work on 191st Tank BN Road shall be scheduled near the beginning of construction and shall be completed as quickly as possible.

[AM#2] The clearing limits shall be marked in the field within 30 days of Notice to Proceed in preparation for a surface burn by Range Control. Range Control will then dedud the fire break line approximately 20 feet wide around the clearing limits. After Range Control has dedudded the fire break line, the contractor shall remove trees and brush in the fire break area and then bog disc the fire break around the clearing limits. Range Control will then control burn the range area and dedud. After dedudding is complete, the range area will be turned over to the Contractor.

1.37 NOT USED.

1.38 NOT USED

1.39 PROGRESS PHOTOGRAPHS

Version 1 The Contractor shall, during the progress of the work, furnish the Contracting Officer photographs, slides, digital photos (furnished on CD-ROM) and negatives depicting construction progress. The photographic

work furnished shall be commercial quality as determined by the Contracting Officer. The photography shall be performed between the first and fifth of each month and the photographs, slides and negatives delivered to the Contracting Officer not later than the 15th of each month taken. A maximum of six views from different positions shall be taken as directed to show, inasmuch as possible, work accomplished during the previous month. At least, one set of photographs, slides and negatives will be made at completion of the contract, after final inspection by the Contracting Officer. The photographs shall be 8"x10" color prints and the slides 35 mm color. Each photograph and slide shall be identified on the face of the picture or the border of the slide giving date made, contract title and number, location of work, as well as a brief description of work depicted. Each negative will be identified with the same information on a sheet of paper by cross-referencing to the number on the negative. Two copies of photographs and slides, along with the original negatives of each view taken, shall be furnished to the Contracting Officer by the time stipulated above. No separate payment will be made for these services and all costs in connection thereto shall be considered a subsidiary obligation of the Contractor.

1.40 PAYMENT FOR MATERIALS DELIVERED OFFSITE. (MAR 1995) EFARS 52.232-5000.

Pursuant to CONTRACT CLAUSE: PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS, materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the CONTRACT CLAUSES are fulfilled. Payment for items delivered to locations other than the worksite will be limited to:

(1) Materials required by the technical provisions,

(2) Materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contract and including the value of material and labor incorporated into the item. In addition to petroleum products, payment for materials delivered off-site is limited to the following items:

List items for which payments will be made for off-site delivery.

1.41 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (SEP 1989) FAR 52.228-5. 17 July 1992

The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(1) Coverage complying with State laws governing insurance requirements, such as those requirements pertaining to Workman's Compensation and Occupational Disease Insurance. Employer's Liability Insurance shall be furnished in limits of not less than $100,000.00 except

in states with exclusive or monopolistic funds.

(2) Comprehensive General Liability Insurance for bodily injury coverage shall be furnished in limits of not less than $500,000 per occurrence.

(3) Comprehensive Automobile Liability Insurance for both bodily injury and property damage, shall be furnished in limits of not less than $200,000.00 per person, $500,000.00 per accident for bodily injury, and $20,000.00 per accident for property damage. When the Financial Responsibility or Compulsory Insurance Law of the State, requires higher limits, the policy shall provide for coverage of at least those higher limits.

Before commencing work under this contract, the Contractor shall submit to the Contracting Officer in writing that the required insurance certification has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

The Contractor shall insert the substance of this clause, including this paragraph, in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

1.42 IMPLEMENTATION OF GOVERNMENT RESIDENT MANAGEMENT SYSTEM

RMS shall be maintained in accordance with Section 01312A QUALITY CONTROL SYSTEM (QCS).

1.43 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER. ER 415-1-15 (31 OCT 89)

This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled "Default: Fixed Price Construction". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

The following schedule of monthly anticipated adverse weather delays is

based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
11	8	6	6	5	4	5	4	4	4	4	6

Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated listed above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)".

1.44 USE OF INCLINOMETER FOR LONG BED DUMP TRUCKS (DACF BULLETIN 25 MARCH 1993)

The recommendation of EM 385-1-1, Section 16.B.15, is mandatory for this project.

1.45 AVAILABILITY OF SAFETY AND HEALTH REQUIREMENTS MANUAL (EM 385-1-1).

As covered by CONTRACT CLAUSE "ACCIDENT PREVENTION", compliance with EM 385-1-1 is a requirement for this contract. Copies may be purchased for $31.00 each at the following address:

United States Government Bookstore
Room 118, Federal Building
1000 Liberty Avenue
Pittsburgh, PA 15222-4003
Telephone: (412) 395-5021 FAX: (412) 395-4547

Or downloaded from the following website:

http://www.usace.army.mil/inet/usace-docs/eng-manuals/em385-1-1/toc.htm

1.46 FIRE PROTECTION DURING CONSTRUCTION (MIL-HDBK-1008c Para. 1.6)

The Contractor is alerted to the requirements of Contract Clause "CLEANING UP" and more specifically to the requirements for fire protection during

construction spelled out in EM 385-1-1 and NFPA No. 241 Building Construction and Demolition Operations. This item must be covered in the submittal required under Contract Clause "ACCIDENT PREVENTION".

1.47 HAUL ROADS

Whenever practical, one-way haul roads shall be used on this contract. Haul roads built and maintained for this work shall comply with the following:

a. One-way haul roads for off-the road equipment; e.g., belly dumps, scrapers, and off-the-road trucks shall have a minimum usable width of 25 ft. One-way haul roads for over-the-road haulage equipment only (e.g., dump trucks, etc.) may be reduced to a usable width of 15 ft. When the Contracting Officer determines that it is impractical to obtain the required width for one-way haul roads (e.g., a road on top of a levee), a usable width of not less than 10 ft. may be approved by the Contracting Officer, provided a positive means of traffic control is implemented. Such positive means shall be signs, signals, and/or signalman and an effective means of speed control.

b. Two-way haul roads for off-the-road haulage equipment shall have a usable width of 60 ft. Two-way haul roads for over-the-road haulage equipment only may be reduced to a usable width of 30 ft.

c. Haul roads shall be graded and otherwise maintained to keep the surface free from potholes, ruts, and similar conditions that could result in unsafe operation.

d. Grades and curves shall allow a minimum sight distance of 200 ft. for one-way roads and 300 ft. for two-way roads. Sight distance is defined as the centerline distance an equipment operator (4.5 ft. above the road surface) can see an object 4.5 ft. above the road surface. When conditions make it impractical to obtain the required sight distance (e.g., ramps over levees), a positive means of traffic control shall be implemented.

e. Dust abatement shall permit observation of objects on the roadway at a minimum distance of 300 ft.

f. Haul roads shall have the edges of the usable portion marked with posts at intervals of 50 ft. on curves and 200 ft. maximum elsewhere. Such markers shall extend 6 ft. above the road surface and, for nighttime haulage, be provided with reflectors in both directions.

1.48 RADIOACTIVE MATERIAL/EQUIPMENT

All equipment (e.g. nuclear density gauges) or items containing radioactive material brought onto Fort Knox must be licensed by the Nuclear Regulatory Commission, and a DA Authorization (DARA) or Permit (DARP) secured. Fort Knox is considered a non-agreement site with respect to reciprocity with State permits; an NRC Form 241 must be obtained for each contract. Contractors must submit a DA Form 3337, "Application for Department of the Army Radiation Authorization or Permit", to the Fort Knox Safety Office before a DARA or a DARP can be obtained. A minimum of 45 days is required

to process the DARA/DARP.

The Ft. Knox Safety Office can provide a waiver of the DARA/DARP for 15 calendar days. A proper NRC Form 241 and a current radioactive material license must be provided to secure a waiver.

1.49 NOT USED

1.50 CONSTRUCTION HAZARD COMMUNICATION

The Contractor is required to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1926.59). This standard is designed to inform workers of safe and appropriate methods of working with hazardous substances in the workplace. The standard has five requirements, and every hazardous or potentially hazardous substance used or stored in the work area is subject to all five. They are:

(1) Hazard Evaluation. Any company which produces or imports a chemical or compound must conduct a hazard evaluation of the substance to determine its potential health or physical hazard. The hazard evaluation consists of an investigation of all the available scientific evidence about the substance. The Contractor is required to assure that all producers (manufacturer/distributors) have performed these evaluations and transmit the required information with any hazardous materials being used or stored on the project site. From the hazard evaluation, a substance may be classified as a health hazard, or a physical hazard. These classifications are then further broken down according to type:

Health Hazards	Physical Hazards
Carcinogens	Combustible liquids
Irritants	Compressed gases
Sensitizers	Explosives
Corrosives	Flammables
Toxic substances	Organic peroxides
Highly toxic substances	Unstable substances
Substances harmful to specific organs or parts of the body	Water-reactive substances

(2) Warning Labels. If a chemical is hazardous or potentially hazardous, the producer or importer must affix a warning label to every container of that chemical before it leaves his facility. The Contractor must assure these labels are attached and legible. The label must identify the chemical, state the hazard, and give the name and address of the producer or importer. If the hazardous substance is transferred to another container, that container must then be labeled, tagged, or marked with the name of the chemical and the appropriate hazard warning. Warning labels should be replaced immediately if they are defaced or removed.

(3) Material Safety Data Sheets. The producer or importer must also supply a material safety data sheet (MSDS). The Contractor must keep these available in the work area where the substance is used, so that the people

using the substance can easily review important safety and health information, such as:

The hazard possible from misuse of the substance
Precautions necessary for use, handling, and storage
Emergency procedures for leaks, spills, fire and first aid
Useful facts about the substance's physical or chemical properties

(4) Work Area Specific Training. Because of hazardous substance may react differently depending on how it is used or the environment of the work area, the Contractor must conduct work area specific training; special training which takes the Contractor's operations, environment, and work policies into consideration. Work area training presents:

The hazardous substances which are present in the work place and the hazards they pose

Ways to protect against those hazards, such as protective equipment, emergency procedures, and safe handling

Where the MSDS's are kept, and an explanation of the labeling system
Where the Contractor's written Hazard Communication Program is located

(5) The Written Hazard Communication Program. In accordance with OSHA requirements, the Contractor must prepare a written Hazard Communication Program. This document will be included in the Contractor's Accident Prevention Plan. This document states how the Contractor plans to ensure that hazardous materials are appropriately labeled, how and where MSDS's will be maintained, and how employees will be provided with specific information and training.

1.51 NOT USED.

1.52 MECHANICAL ROOM LAYOUT (ORL).

Detailed mechanical room layout drawings shall be submitted for approval in accordance with SD-04 Section 01330. Layout drawings shall show location and maintenance clearances for all mechanical room equipment, and all utility runs/chases for mechanical, electrical, telephone and other similar systems. Drawings shall be submitted at the same time as the submittals for the equipment to be located within the mechanical room.

1.53 RIGHTS IN TECHNICAL DATA--NONCOMMERCIAL ITEMS (NOV 1995) 252.227-7013 (JUN 1995).

(a) Definitions. As used in this clause:

(1) "Computer data base" means a collection of data recorded in a form capable of being processed by a computer. The term does not include computer software.

(2) "Computer program" means a set of instructions, rules, or routines recorded in a form that is capable of causing a computer to perform a specific operation or series of operations.

(3) "Computer software" means computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the software to be reproduced, recreated, or recompiled. Computer software does not include computer data bases or computer software documentation.

(4) "Computer software documentation" means owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software.

(5) "Detailed manufacturing or process data" means technical data that describe the steps, sequences, and conditions of manufacturing, processing or assembly used by the manufacturer to produce an item or component or to perform a process.

(6) "Developed" means that an item, component, or process exists and is workable. Thus, the item or component must have been constructed or the process practiced. Workability is generally established when the item, component, or process has been analyzed or tested sufficiently to demonstrate to reasonable people skilled in the applicable art that there is a high probability that it will operate as intended. Whether, how much, and what type of analysis or testing is required to establish workability depends on the nature of the item, component, or process, and the state of the art. To be considered "developed," the item, component, or process need not be at the stage where it could be offered for sale or sold on the commercial market, nor must the item, component, or process be actually reduced to practice within the meaning of Title 35 of the United States Code.

(7) "Developed exclusively at private expense" means development was accomplished entirely with costs charged to indirect cost pools, costs not allocated to a government contract, or any combination thereof.

(i) Private expense determinations should be made at the lowest practicable level.

(ii) Under fixed-priced contracts, when total costs are greater than the firm-fixed-price or ceiling price of the contract, the additional development costs necessary to complete development shall not be considered when determining whether development was at government, private, or mixed expense.

(8) "Developed exclusively with government funds" means development was not accomplished exclusively or partially at private expense.

(9) "Developed with mixed funding" means development was accomplished partially with costs charged to indirect cost pools and/or costs not allocated to a government contract, and partially with costs charged directly to a government contract.

(10) "Form, fit, and function data" means technical data that describes the required overall physical, functional, and performance characteristics (along with the qualification requirements, if applicable) of an item, component, or process to the extent necessary to permit identification of physically and functionally interchangeable items.

(11) "Government purpose" means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so.

(12) "Government purpose rights" means the right to--

(i) Use, modify, reproduce, release, perform, display, or disclose technical data within the Government without restrictions; and

(ii) Release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that data for United States government purposes.

(13) "Limited rights" means the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government. The Government may not, without the written permission of the party asserting limited rights, release or disclose the technical data outside the Government, use the technical data for manufacture, or authorize the technical data to be used by another part, except that the Government may reproduce, release or disclose such data or authorize the use or reproduction of the data by persons outside the Government if reproduction, release, disclosure, or use is--

(i) Necessary for emergency repair and overhaul; or

(ii) A release or disclosure of technical data (other than detailed manufacturing or process data) to, or use of such data by, a foreign government that is in the interest of the Government and is required for evaluational or informational purposes;

(iii) Subject to a prohibition on the further reproduction, release, disclosure, or use of the technical data; and

(iv) The contractor or subcontractor asserting the restriction is notified of such reproduction, release, disclosure, or use.

(14) "Technical data" means recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such a financial and/or management information.

(15) "Unlimited rights" means rights to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so.

(b) Rights in technical data.

The Contractor grants or shall obtain for the Government the following royalty free, world-wide, nonexclusive, irrevocable license rights in technical data other than computer software documentation (see Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause of this contract for rights in computer software documentations):

(1) Unlimited rights.

The Government shall have unlimited rights in technical data that are--

(i) Data pertaining to an item, component, or process which has been or will be developed exclusively with Government funds;

(ii) Studies, analyses, test data, or similar data produced for this contract, when the study, analysis, test, or similar work was specified as an element of performance;

(iii) Created exclusively with Government funds in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes;

(iv) Form, fit, and function data;

(v) Necessary for installation, operation, maintenance, or training purposes (other than detailed manufacturing or process data);

(vi) Corrections or changes to technical data furnished to the Contractor by the Government;

(vii) Otherwise publicly available or have been released or disclosed by the Contractor or subcontractor without restrictions on further use, release or disclosure, other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the technical data to another party or the sale or transfer of some or all of a business entity or its assets to another party;

(viii) Data in which the Government has obtained unlimited rights under another Government contract or as a result of negotiations; or

(ix) Data furnished to the Government, under this or any other Government contract or subcontract thereunder, with--

(A) Government purpose license rights or limited rights and the restrictive condition(s) has/have expired; or

(B) Government purpose rights and the Contractor's exclusive right to use such data for commercial purposes has expired.

(2) Government purpose rights.

(i) The Government shall have government purpose rights for a five-year period, or such other period as may be negotiated, in technical data--

(A) That pertain to items, components, or processes developed with mixed funding except when the Government is entitled to unlimited rights in such data as provided in paragraphs (b)(ii) and (b)(iv) through (b)(ix) of this clause; or

(B) Created with mixed funding in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes.

(ii) The five-year period, or such other period as may have been negotiated, shall commence upon execution of the contract, subcontract, letter contract (or similar contractual instrument), contract modification, or option exercise that required development of the items, components, or processes or creation of the data described in paragraph (b)(2)(i)(B) of this clause. Upon expiration of the five-year or other negotiated period, the Government shall have unlimited rights in the technical data.

(iii) The Government shall not release or disclose technical data in which it has government purpose rights unless--

(A) Prior to release or disclosure, the intended recipient is subject to the non-disclosure agreement at 227.7103-7 of the Defense Federal Acquisition Regulation Supplement (DFARS); or

(B) The recipient is a Government contractor receiving access to the data for performance of a Government contract that contains the clause at DFARS 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Market with Restrictive Legends.

(iv) The Contractor has the exclusive right, including the right to license others, to use technical data in which the Government has obtained government purpose rights under this contract for any commercial purpose during the time period specified in the government purpose rights legend prescribed in paragraph (f)(2) of this clause.

(3) Limited rights.

(i) Except as provided in paragraphs (b)(1)(ii) and (b)(1)(iv) through (b)(1)(ix) of this clause, the Government shall have limited rights in technical data--

(A) Pertaining to items, components, or processes developed exclusively at private expense and marked with the limited rights legend prescribed in paragraph (f) of this clause; or

(B) Created exclusively at private expense in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes.

(ii) The Government shall require a recipient of limited rights data for emergency repair or overhaul to destroy the data and all copies in its possession promptly following completion f the emergency repair/overhaul and to notify the Contractor that the data have been destroyed.

(iii) The Contractor, its subcontractors, and suppliers are not required to provide the Government additional rights to use, modify, reproduce, release, perform, display, or disclose technical furnished to the Government with limited rights. However, if the Government desires to obtain additional rights in technical data in which it has limited rights, the Contractor agrees to promptly enter into negotiations with the Contracting Officer to determine whether there are acceptable terms for transferring such rights. All technical data in which the Contractor has granted the Government additional rights shall be listed or described in a license agreement made part of the contract. the license shall enumerate the additional rights granted the Government in such data.

(4) Specifically negotiated license rights.

The standard license rights granted to the Government under paragraphs (b)(1) through (b)(3) of this clause, including the period during which the Government shall have government purpose rights in technical data, may be modified by mutual agreement to provide such rights as the parties consider appropriate but shall not provide the Government lesser rights than are enumerated in paragraph (a)(13) of this clause. Any rights so negotiated shall be identified in a license agreement made part of this contract.

(5) Prior government rights.

Technical data that will be delivered, furnished, or otherwise provided to the Government under this contract, in which the Government has previously obtained rights shall be delivered, furnished, or provided with the pre-existing rights, unless--

(i) The parties have agreed otherwise; or

(ii) Any restrictions on the Government's rights to use, modify, reproduce, release, perform, display, or disclose the data have expired or no longer apply.

(6) Release from liability.

The Contractor agrees to release the Government from liability for any release or disclosure of technical data made in accordance with paragraph (a)(13) or (b)(2)(iii) of this clause, in accordance with the terms of a license negotiated under paragraph (b)(4) of this clause, or by others to whom the recipient has released or disclosed the data and to seek

relief solely from the party who has improperly used, modified, reproduced, released, performed, displayed, or disclosed Contractor data marked with restrictive legends.

(c) Contractor rights in technical data.

All rights not granted to the Government are retained by the Contractor.

(d) Third party copyrighted data.

The Contractor shall not, without the written approval of the Contracting Officer, incorporate any copyrighted data in the technical data to be delivered under this contract unless the Contractor is the copyright owner or has obtained for the Government the license rights necessary to perfect a license or licenses in the deliverable data of the appropriate scope set forth in paragraph (b) of this clause, and has affixed a statement of the license or licenses obtained on behalf of the Government and other persons to the data transmittal document.

(e) Identification and delivery of data to be furnished with restrictions on use, release, or disclosure.

(1) This paragraph does not apply to restrictions based solely on copyright.

(2) Except as provided in paragraph (e)(3) of the clause, technical data that the Contractor assets should be furnished to the Government with restrictions on use, release, or disclosure are identified in an attachment to this contract (see Attachment). The Contractor shall not deliver any data with restrictive markings unless the data are listed on the Attachment.

(3) In addition to the assertions made in the Attachment, other assertions may be identified after award when based on new information or inadvertent omissions unless the inadvertent omissions would have materially affected the source selection decision. Such identification and assertion shall be submitted to the Contracting Officer as soon as practicable prior to the scheduled date for delivery of the data, in the following format, and signed by an official authorized to contractually obligate the Contractor:

Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data.

The Contractor asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data should be restricted--

Technical Data to be Furnished With Restrictions*	Asserted Basis for Assertion**	Rights Category***	Name of Person Asserting Restrictions****
(LIST)	(LIST)	(LIST)	(LIST)

*If the assertion is applicable to items, components, or processes developed at private expense, identify both the data and each such item, component, or process.

**Generally, the development of an item, component, or process at private expense, either exclusively or partially, is the only basis for asserting restrictions on the Government's rights to use, release, or disclose technical data pertaining to such terms, components, or processes. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government's right should be restricted.

***Enter asserted rights category (e.g. government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited or government purpose rights under this or a prior contract, or specifically negotiated licenses).

****Corporation, individual, or other person, as appropriate.

Date _____

Printed Name and Title _____

_____

Signature _____

_____

(End of identification and assertion)

(4) When requested by the Contracting Officer, the Contractor shall provide sufficient information to enable the Contracting Officer to evaluate the Contractor's assertions. The Contracting Officer reserves the right to add the Contractor's assertions to the Attachment and validate any listed assertion, at a later date, in accordance with the procedures of the Validation of Restrictive Markings on Technical Data clause of this contract.

(f) Marking requirements.

The Contractor, and its subcontractor or suppliers, may only assert restrictions on the Government's rights to use, modify, reproduce, release, perform, display, or disclose technical data to be delivered under this contract by marking the deliverable data subject to restriction. Except as provided in paragraph (f)(5) of this clause, only the following legends are authorized under this contract: the government purpose rights legend at paragraph (f)(2) of this clause: the limited rights legend at paragraph (f)(3) of this clause: or the special license rights legend at paragraph (f)(4) of this clause, and/or a notice of copyright as prescribed under 17 U.S.C. 401 or 402.

(1) General marking instructions.

The Contractor, or its subcontractors or suppliers, shall conspicuously and legibly mark the appropriate legend on all technical data that qualify for such markings. The authorized legends shall be placed on the transmittal document or storage container and, for printed material, each page of the printed material containing technical data for which restrictions are asserted. When only portions of a page of printed material are subject to the asserted restrictions, such portions shall be identified by circling, underscoring, with a note, or other appropriate identifier. Technical data transmitted directly from one computer or computer terminal to another shall contain a notice of asserted restrictions. Reproductions of technical data or any portions thereof subject to asserted restrictions shall also reproduce the asserted restrictions.

(2) Government purpose rights markings.

Data delivered or otherwise furnished to the Government with government purpose rights shall be marked as follows:

GOVERNMENT PURPOSE RIGHTS

Contract No. _____

Contractor Name _____

Contractor Address _____

_____

Expiration Date _____

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(2) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. No restrictions apply after the expiration date shown above. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of legend)

(3) Limited rights markings.

Data delivered or otherwise furnished to the Government with limited rights shall be marked with the following legend:

LIMITED RIGHTS

Contract No. _____

Contractor Name _____

Contractor Address _____

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(3) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings. Any person, other than the Government, who has been provided access to such data must promptly notify the above name Contractor.

(End of legend)

(4) Special license rights markings.

(I) Data in which the Government's rights stem from a specifically negotiated license shall be marked with the following legend:

SPECIAL LICENSE RIGHTS

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these data are restricted by Contract No. _____)Insert contract number) _____, License No. _____ (Insert license identifier) _____. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of legend)

(ii) For purposes of this clause, special licenses do not include government purpose license rights acquired under a prior contract (see paragraph (b)(5) of this clause)_.

(5) Pre-existing data markings.

If the terms of a prior contract or license permitted the Contractor to restrict the Government's rights to use, modify, reproduce, release perform, display, or disclose technical data deliverable under this contract, and those restrictions are still applicable, the Contractor may mark such data with the appropriate restrictive legend for which the data qualified under the prior contract or license. The marking procedures in paragraph (f)(1) of this clause shall be followed.

(g) Contractor procedures and records.

Throughout performance of this contract, the Contractor and its subcontractors or suppliers that will deliver technical data with other than unlimited rights, shall--

(1) Have, maintain, and follow written procedures sufficient to assure that restrictive markings are used only when authorized by the terms of this clause, and

(2) Maintain records sufficient to justify the validity of any

restrictive markings on technical data delivered under this contract.

(h) Removal of unjustified and nonconforming markings.

(1) Unjustified technical data markings.

The rights and obligations of the parties regarding the validation of restrictive markings or technical data furnished or to be furnished under this contract are contained in the Validation of Restrictive Markings on Technical Data clause of this contract. Notwithstanding any provision of this contract concerning inspection and acceptance, the Government may ignore or, at the Contractor's expense, correct or strike a marking if, in accordance with the procedures in the Validation of Restrictive Markings on Technical Data clause of this contract, a restrictive marking is determined to be unjustified.

(2) Nonconforming technical data markings.

A nonconforming marking is a marking placed on technical data delivered or otherwise furnished to the Government under this contract that is not in the format authorized by this contract. Correction of nonconforming markings is not subject to the Validation of Restrictive Markings on Technical Data clause of this contract. If the Contracting Officer notifies the Contractor of a nonconforming marking and the Contractor fails to remove or correct such marking within sixty (60) days, the Government may ignore or, at the Contractor's expense, remove or correct any nonconforming marking.

(I) Relation to patents.

Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other with otherwise granted to the Government under any patent.

(j) Limitation on charges for rights in technical data.

(1) The Contractor shall not charge to this contract any cost, including, but not limited to, license fees, royalties, or similar charges, for rights in technical data to be delivered under this contract when--

(I) The Government has acquired, by any means, the same or greater rights in the data; or

(ii) The data are available to the public without restrictions.

(2) The limitation in paragraph (j)(1) of this clause--

(I) Includes costs charged by a subcontractor or supplier, at any tier, or costs incurred by the Contractor to acquire rights in subcontractor or supplier technical data, if the subcontractor or supplier has been paid for such rights under any other Government contract or under a license conveying the rights to the Government; and

(ii) Does not include the reasonable costs of reproducing,

handling, or mailing the documents or other media in which the technical data will be delivered.

(k) Applicability to subcontractors or suppliers.

(1) The Contractor shall ensure that the rights afforded its subcontractors and suppliers under 10 U.S.C. 2320, 10 U.S.C. 2321, and the identification, assertion, and delivery processes of paragraph (e) of this clause are recognized and protected.

(2) Whenever any technical data for noncommercial items is to be obtained from a subcontractor or supplier for delivery to the Government under this contract, the Contractor shall use this same clause in the subcontract or other contractual instrument, and require its subcontractors or suppliers to do so, without alteration, except to identify the parties. No other clause shall be used to enlarge or diminish the Government's, the Contractor's, or a higher-tier subcontractor's or supplier's rights in a subcontractor's or supplier's technical data.

(3) Technical data required to be delivered by a subcontractor or supplier shall normally be delivered to the next higher-tier contractor, subcontractor, or supplier. However, when there is a requirement in the prime contract for data which may be submitted with other than unlimited rights by a subcontractor or supplier, then said subcontractor or supplier may fulfill its requirement by submitting such data directly to the Government, rather than through a higher-tier contractor, subcontractor, or supplier.

(4) The Contractor and higher-tier subcontractors or suppliers shall not use their power to award contracts as economic leverage to obtain rights in technical data from their subcontractors or suppliers.

(5) In no event shall the Contractor use its obligation to recognize and protect subcontractor or supplier rights in technical data as an excuse for failing to satisfy its contractual obligation to the Government.

1.54 LIMITATIONS ON THE USE OR DISCLOSURE OF GOVERNMENT-FURNISHED INFORMATION MARKED WITH RESTRICTIVE LEGEND DFARS 252.227-7025 (JUN 1995)

(a)(1) For contracts requiring the delivery of technical data, the terms, "limited rights" and "Government purpose rights" are defined in the Rights in Technical Data--Noncommercial Items clause of this contract.

(2) For contracts that do not require the delivery of technical data, the terms "government purpose rights" and "restricted rights" are defined in the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause of this contract.

(3) For Small Business Innovative Research program contracts, the terms "limited rights" and "restricted rights" are defined in the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause of this contract.

(b) Technical data or computer software provided to the Contractor as Government furnished information (GFI) under this contract may be subject to restrictions on use, modification, reproduction, release, performance, display, or further disclosure.

(1) GFI marked with limited or restricted rights legends.

The Contractor shall use, modify, reproduce, perform, or display technical data received from the Government with limited rights legends or computer software received with restricted rights legends only in the performance of this contract. The Contractor shall not, without the express written permission of the party whose name appears in the legend, release or disclose such data or software to any person.

(2) GFI marked with government purpose rights legends.

The Contractor shall use technical data or computer software received from the Government with government purpose rights legends for government purposes only. The Contractor shall not, without the express written permission of the party whose name appears in the restrictive legend, use, modify, reproduce, release, perform, or display such data or software for any commercial purpose or disclose such data or software to a person other than its subcontractors, suppliers, or prospective subcontractors or suppliers, who require the data or software to submit offers for, or perform, contracts under this contract. Prior to disclosing the data or software, the Contractor shall require the persons to whom disclosure will be made to complete and sign the non-disclosure agreement at 227.7103-7 of the Defense Federal Acquisition Regulation Supplement (DFARS).

(3) GFI marked with specially negotiated license rights legends.

The Contractor shall use, modify, reproduce, release, perform, or display technical data or computer software received from the Government with specially negotiated license legends only as permitted in the license. Such data or software may not be release or disclosed to other persons unless permitted by the license and, prior to release or disclosure, the intended recipient has completed the non-disclosure agreement at DFARS 227.7103-7. The Contractor shall modify paragraph (1)(c) of the non-disclosure agreement to reflect the recipient's obligations regarding use, modification, reproduction, release, performance, display, and disclosure of the data of software.

(c) Indemnification and creation of third party beneficiary rights.

The Contractor agrees--

(1) To indemnify and hold harmless the Government, its agents, and employees from every claim or liability, including attorneys fees, court costs, and expenses, arising out of, or in any way related to, the misuse or unauthorized modification, reproduction, release, performance, display, or disclosure of technical data or computer software received from the Government with restrictive legends by the Contractor or any person to whom the Contractor has released or disclosed such data or software; and

(2) That the party whose name appears on the restrictive legend, in addition to any other rights it may have, is a third party beneficiary who has the right of direct action against the Contractor, or any person to whom the Contractor has released or disclosed such data or software, for the unauthorized duplication, release, or disclosure of technical data or computer software subject to restrictive legends.

1.55 NOT USED

1.56 NOT USED.

1.57 PARTNERING

In order to most effectively accomplish this contract, the Government proposes to form a partnership with the Contractor to develop a cohesive building team. It is anticipated that this partnership would involve the Corps of Engineers, [the Directorate of Environmental and Master Planning,] the Contractor, primary subcontractors and the designers. This partnership would strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership would be bilateral in membership and participation will be totally voluntary. All costs, excluding labor and travel expenses, shall be shared equally between the Government and the Contractor. The Contractor and Government shall be responsible for their own labor and travel costs.

1.58 ACTIVITY ENVIRONMENTAL ANALYSIS
1 February 1995

Before starting any major phase of the work, an Activity Environmental Analysis shall be developed by the contractor and reviewed with the Government Representative. A major phase of the work is defined as an operation involving a type of work not previously experienced which presents possible sources of adverse environmental effects. This analysis will evaluate potential environmental consequences of the activity and the techniques which will be utilized to accomplish the work in an acceptable manner. This analysis includes: (1) the phase or activity of work; (2) the potential environmental consequences of the activity; (3) precautionary actions to prevent adverse environmental impacts; (4) actions in the event of an environmental incident; and (5) the appropriate reference to Federal, State, or Local standards, regulations, or laws.

1.59 CONSTRUCTION AND DEMOLITION (C&D) WASTE MANAGEMENT PLAN
16 July 1999

a. The Contractor is required to submit for government approval a detailed C&D Waste Management Plan within 30 days after contract award and prior to initiating any site clearance or C&D work.

b. Specific elements to be addressed in the plan are as follows: Designated individuals on the contractor's staff who are responsible for C&D waste prevention and management.

(1) Actions that will be taken to reduce solid waste generation

(including use of more efficient facility design and construction processes, reduced packaging and packing materials, supplier take-back programs, etc.). Description of the specific approaches to be used in recycling/reuse of the various materials generated, including, as appropriate, the specification of areas and equipment to be used for processing, sorting, and temporary storage of C&D wastes.

(2) Characterization of the waste to be generated during the C&D project, to include types and quantities of waste materials. The characterization should address site waste materials, building materials, packaging, packing, wastes generated by construction equipment, wastes generated by site offices, and wastes generated by the workforce on-site.

(3) Landfill and/or incinerator name, tipping fee amounts, projected cost of disposing of all trash and waste materials in the landfill/incinerator, as if there would be no salvage or recycling on the project.

(4) Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and public arts programs that accept used materials (e.g., Habitat For Humanity, national materials exchange networks).

(5) A list of specific waste materials that will be salvaged for resale, salvaged and reused, and recycled; the recycling facilities that will be utilized; and copies of their permits and/or registrations.

(6) Identification of materials that cannot be recycled/reused with a written justification. All disposed materials including anticipated hazardous wastes must include names of haulers and disposal sites, and copies of their permits and/or registrations.

(7) Anticipated net cost savings determined by subtracting contractor program management costs and the cost of salvage (deconstruction), separating, and recycling from the following:

(1)revenue from the sale of salvaged products and materials;
(2)revenue from the sale of recycled products and materials;
(3)revenue from the return of materials; and
(4)incineration and/or landfill tipping fees saved due to diversion of materials.

(8) The plan must cover the following materials if the material is applicable to the specific project.

Asphalt	Gypsum
Concrete	Plastic
Soil	Polystyrene
Metal	Porcelain
Wood	Corrugated cardboard
Brick	Carpet

c. Firms and facilities used by the contractor for recycling, reuse, and disposal shall be appropriately permitted for the contractor's intended

use, to the extent required by federal, state, and local regulations. The contractor shall maintain records of disposition of the materials, including all copies of manifests, origin, and disposal forms, and bills of lading. All facility, landfill, and hauler permits showing USEPA and state registration numbers shall be maintained and shall be available to the contracting officer when requested.

d. The Contracting Officer shall review the C&D waste management plan in coordination with the environmental office within 7 calendar days of submittal. Where the contracting officer determines that the contractor has diligently explored all feasible methods to reduce C&D waste, the plan shall be approved, or approved with comment. Where it is determined that the contractor has not diligently explored all feasible methods, the contracting officer shall request a resubmittal.

e. All revenues generated by reusing, returning, salvaging, or recycling materials, as well as costs avoided by reduced tipping and incineration fees as compared to conventional disposal shall accrue to the contractor's benefit and be reported to the Contracting Officer. Where an on-site Army C&D landfill is the only available disposal facility, the Contractor will be changed the prevailing commercial rate.

1.60 NOT USED

1.61 NOT USED.

1.62 NOT USED.

1.63 NOT USED.

1.64 NOT USED.

1.65 NOT USED.

1.66 NOT USED.

1.67 NOT USED.

1.68 NOT USED.

1.69 NOT USED.

1.70 NOT USED.

1.71 NOT USED.

1.72 NOT USED.

1.73 POLLUTION PREVENTION PLAN

In accordance with the National Pollutant Discharge Elimination System (NPDES) Permit, a Pollution Prevention Plan (PPP) is required for this project. This plan shall be developed by the Contractor as a pre construction activity and must meet the erosion and sediment control

requirements for the state of Kentucky. The plan must identify the controls that will be used and include design, inspection, and maintenance information. A site plan with the existing and proposed grading shall be included, showing the controls being utilized. The permanent stabilization practices (permanent seeding, mulching, sodding, plants, erosion control blanket, riprap, etc.) should be shown on the final grading plan, with temporary controls (temporary gravel construction entrance/exit, silt fences, straw bales, temporary diversions, sediment basins or traps, etc.) shown on the existing grading plan. Use of straw bales alone is not considered an effective method of sediment control and should not be used. Prior to the start of construction, the Contractor shall submit the Pollution Prevention Plan to the Contracting Officer for review and approval. PPP must address compliance with all State laws regarding historic preservation and endangered species with State Letters attached. Commencement/ start of construction (ground disturbing activity) by the Contractor CANNOT start prior to the NPDES Permit and the letter of compliance being received. A copy of both the PPP and NPDES Permit must be kept at the construction site. Comply with specification Section 02130 KPDES Permit for Construction.

1.74 NOT USED.

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION NOT USED

-- End of Section --

WAIS Document Retrieval GENERAL DECISION KY020027 08/16/02 KY27
General Decision Number KY020027

Superseded General Decision No. KY010027

State: Kentucky

Construction Type:
HEAVY
HIGHWAY

County(ies):

ANDERSON	GALLATIN	MERCER
BATH	GRANT	MONTGOMERY
BOURBON	GRAYSON	NELSON
BOYD	GREENUP	NICHOLAS
BOYLE	HARDIN	OLDHAM
BRACKEN	HARRISON	OWEN
BRECKINRIDGE	HENRY	ROBERTSON
BULLITT	JEFFERSON	ROWAN
CARROLL	JESSAMINE	SCOTT
CARTER	LARUE	SHELBY
CLARK	LEWIS	SPENCER
ELLIOTT	MADISON	TRIMBLE
FAYETTE	MARION	WASHINGTON
FLEMING	MASON	WOODFORD
FRANKLIN	MEADE	

Heavy and Highway Construction Projects

Modification Number	Publication Date
0	03/01/2002
1	04/05/2002
2	05/03/2002
3	06/21/2002
4	07/05/2002
5	08/16/2002

COUNTY(ies):

ANDERSON	GALLATIN	MERCER
BATH	GRANT	MONTGOMERY
BOURBON	GRAYSON	NELSON
BOYD	GREENUP	NICHOLAS
BOYLE	HARDIN	OLDHAM
BRACKEN	HARRISON	OWEN
BRECKINRIDGE	HENRY	ROBERTSON
BULLITT	JEFFERSON	ROWAN
CARROLL	JESSAMINE	SCOTT
CARTER	LARUE	SHELBY
CLARK	LEWIS	SPENCER
ELLIOTT	MADISON	TRIMBLE
FAYETTE	MARION	WASHINGTON
FLEMING	MASON	WOODFORD
FRANKLIN	MEADE	

BRIN0004D 04/01/2002

	Rates	Fringes

BRECKINRIDGE COUNTY:

BRICKLAYERS	24.15	6.55

BRKY0001G 06/01/2001

	Rates	Fringes
BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER & TRIMBLE COUNTIES:		
BRICKLAYERS	20.00	5.43

BRKY0002F 06/01/2002

	Rates	Fringes
BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:		
BRICKLAYERS	22.96	7.39

BRKY0007D 06/01/2001

	Rates	Fringes
BOYD, CARTER, ELLIOTT, FLEMING, GREENUP, LEWIS & ROWAN COUNTIES:		
BRICKLAYERS	23.04	8.32

BRKY0017D 06/01/2001

	Rates	Fringes
ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN, HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, OWEN, SCOTT, WASHINGTON & WOODFORD COUNTIES:		
BRICKLAYERS	18.75	5.55
LAYOUT MEN	19.00	5.55
REFRACTORY/ACID BRICK/GLASS	19.25	5.55

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* CARP0064A 07/01/2002

	Rates	Fringes
CARPENTERS	21.45	6.13
PILEDRIVERMEN	21.70	6.13
DIVERS	32.55	6.13

CARP1031P 06/01/2002

	Rates	Fringes
ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN, HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, OWEN, SCOTT & WOODFORD COUNTIES:		
MILLWRIGHTS	19.50	9.53

CARP1031Q 06/01/2002

	Rates	Fringes
BOYD, CARTER, ELLIOTT, FLEMING, GREENUP, LEWIS, MASON, ROBERTSON & ROWAN COUNTIES:		
MILLWRIGHTS	20.79	14.04

CARP1031R 06/01/2002

	Rates	Fringes
BRECKINRIDGE, BULLITT, CARROLL, GALLATIN, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:		
MILLWRIGHTS	22.25	10.30

CARP1066D 09/01/1999

	Rates	Fringes
BRACKEN & GRANT COUNTIES:		
MILLWRIGHTS	21.90	7.92

ELEC0212H 05/28/2001

	Rates	Fringes
BRACKEN, GALLATIN & GRANT COUNTIES:		
ELECTRICIANS	23.53	7.20

ELEC0212Q 11/01/2000

	Rates	Fringes
BRACKEN, GALLATIN & GRANT COUNTIES:		
SOUND COMMUNICATIONS:		
Installer	18.00	3.475
Cable Puller	9.00	2.64

ELEC0317L 05/30/2001

	Rates	Fringes
BOYD, CARTER, ELLIOTT & ROWAN COUNTIES:		
ELECTRICIANS:		
Electricians	23.11	11.04
Cable Splicers	24.27	11.08

ELEC0369J 06/01/2001

	Rates	Fringes
ANDERSON, BATH, BOURBON, BOYLE, BRECKINRIDGE, BULLITT, CARROLL, CLARK, FAYETTE, FRANKLIN, GRAYSON, HARDIN, HARRISON, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, MONTGOMERY, NELSON, NICHOLAS, OLDHAM, OWEN, ROBERTSON, SCOTT,		

SHELBY, SPENCER, TRIMBLE, WASHINGTON & WOODFORD COUNTIES:

ELECTRICIANS	23.50	7.73

ELEC0575B 05/29/2002

	Rates	Fringes
FLEMING, GREENUP, LEWIS & MASON COUNTIES:		
ELECTRICIANS	26.50	7.325

ENGI0181Y 01/01/2002

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	20.85	8.40
GROUP 2	18.43	8.40
GROUP 3	18.81	8.40
GROUP 4	18.17	8.40

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loaders; Grade-All; Gurries; Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill Operator; Hydrocrane;

Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel Bucket; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Conrete Pump; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points;

& Whirley Oiler

GROUP 3 - Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES WITH BOOMS 150 ft. & Over (Including JIB) $.50 Premium

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10% ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

IRON0044I 06/01/2002

	Rates	Fringes
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);		
CARROLL (Eastern third, including the Township of Ghent);		
FLEMING (Western part, excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);		
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);		
NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);		
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);		
SCOTT (Northern two-thirds, including Townships of Biddle, Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall) &		
BRACKEN, GALLATIN, GRANT, HARRISON & ROBERTSON COUNTIES:		
IRONWORKERS:		
Structural	23.60	10.63
Fence Erector	21.24	10.63

IRON0070J 06/01/2002

	Rates	Fringes
BOURBON (Southern two-thirds, including Townships of Austerlity, Centerville, Clintonville, Elizabeth, Hutchison, Littlerock, North Middletown & Paris);		
CARROLL (Western two-thirds, including Townships of Carrollton, Easterday, English, Locust, Louis, Prestonville & Worthville);		
CLARK (Western two-thirds, including Townships of Becknerville, Flanagan, Ford, Pine Grove, Winchester & Wyandotte);		
OWEN (Eastern eighth, including Townships of Glenmary, Gratz, Monterey, Perry Park & Tacketts Mill);		
SCOTT (Southern third, including Townships of Georgetown, Great Crossing, Newtown, Stampling Ground & Woodlake);		
ANDERSON, BOYLE, BRECKINRIDGE, BULLITT, FAYETTE, FRANKLIN, GRAYSON, HARDIN, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE, WASHINGTON & WOODFORD COUNTIES:		
IRONWORKERS	23.25	10.87

IRON0372F 06/01/2002

	Rates	Fringes
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);		
CARROLL (Eastern third, including the Township of Ghent);		
FLEMING (Western part, Excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);		
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);		
NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);		
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);		
SCOTT (Northern two-thirds, including Townships of Biddle, Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall);		

BRACKEN, GALLATIN, GRANT, HARRISON & ROBERTSON COUNTIES:

IRONWORKERS, Reinforcing:		
Up to & including 30-mile radius of Hamilton County, Ohio Courthouse	22.71	10.47
Beyond 30-mile radius of Hamilton County, Ohio Courthouse	22.96	10.47

IRON0769G 06/01/2002

	Rates	Fringes
CLARK (Eastern third, including Townships of Bloomingdale, Hunt, Indian Fields, Kiddville, Loglick, Rightangele & Thomson);		
FLEMING (Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);		
MASON (Eastern third, including Townships of Helena, Marshall, Orangeburg, Plumville & Springdale);		
NICHOLAS (Eastern eighth, including the Township of Moorefield Sprout);		

BATH, BOYD, CARTER, ELLIOTT, GREENUP, LEWIS, MONTGOMERY & ROWAN COUNTIES:

IRONWORKERS:		
ZONE 1	24.92	11.14
ZONE 2	25.32	11.14
ZONE 3	27.32	11.14

ZONE 1 - Up to 10 mi. radius of union hall, Ashland, Ky., 1643 Greenup Avenue
ZONE 2 - 10 to 50 mi. radius of union hall;
ZONE 3 - 50 mi. radius and beyond

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* LABO0189C 07/01/2002

	Rates	Fringes
LABORERS:		
GROUP 1	16.34	7.38
GROUP 2	16.59	7.38
GROUP 3	16.64	7.38
GROUP 4	17.24	7.38

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic

& Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; & Wrecking of Concrete Form

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; & Wagon Driller

GROUP 3 - Air Track Driller; Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Powderman & Blaster; Side Rail Setter; Rail Paved Ditch; Screw Operator; Tunnel (Free Air); & Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air)

PAIN0012F 06/01/2001

	Rates	Fringes
BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN, HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, ROBERTSON, SCOTT & WOODFORD COUNTIES:		
PAINTERS:		
Brush; Roll; Spray; Sandblasting; Steam Cleaning; Steeplejack Work; Lead Abatement; & Coal Tar	16.81	2.60
Bridge/Equipment Tender and/or Containment Builder	17.96	2.60
Swing & Scaffold Bridges; Structural Steel; Open Acid Tanks; High Tension Electrical Equipment; & Hot Pipes	21.00	2.60

PAIN0012T 06/09/2001

	Rates	Fringes
BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:		
PAINTERS:		

Elevated Tanks	22.05	4.70
(HEAVY & HIGHWAY BRIDGES - GUARDRAILS-LIGHTPOLES-STRIPING):		
Bridge/Equipment Tender and/or Containment Builder	18.74	4.70
Brush & Roller	21.05	4.70
Spray	21.55	4.70
Sandblasting & Hopper Tender; Water Blasting	21.80	4.70
Bridges when highest point of clearance is 60 feet or more; & Lead Abatement Projects	22.05	4.70
Sandblasting, Hopper Tender, Waterblasting (Bridges when highest point of clearance is 60 feet or more)	22.80	4.70

PAIN0118D 05/01/2002

	Rates	Fringes
ANDERSON, BRECKINRIDGE, BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:		
PAINTERS:		
Brush	17.02	5.92
Abrasive Blaster; Fireproofing; Lead Abatement; Spray; & Waterblasting 4000 PSI and Above	17.52	5.92

PAIN1072D 06/01/2001

	Rates	Fringes
BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:		
PAINTERS:		
Bridges	22.71	7.31
All Other Work	19.00	7.31

PLUM0107F 08/01/2001

	Rates	Fringes
BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN (Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:		
PLUMBERS; GAS FITTERS:		
Plumbing contracts less than $150,000.00	19.17	5.97
All Other Plumbing contracts	24.15	5.97

PLUM0248C 06/01/2002

	Rates	Fringes
BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:		

PLUMBERS & STEAMFITTERS	22.97	12.40

PLUM0392H 06/01/2001

	Rates	Fringes
BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN & ROBERTSON COUNTIES:		
PIPEFITTERS & PLUMBERS	25.50	7.53

PLUM0452C 11/01/2001

	Rates	Fringes
ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN (Eastern one-fourth), HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, SCOTT & WOODFORD COUNTIES:		
PIPEFITTERS & PLUMBERS:		
Projects over 1 1/2 million dollars in piping contracts:		
ZONE 1	22.15	6.87
ZONE 2	23.15	6.87
Projects under 1 1/2 million dollars in piping contracts:		
ZONE 1	18.77	6.87
ZONE 2	19.77	6.87

ZONE 1 - Within 25 mile radius of Fayette County Courthouse
ZONE 2 - Beyond 25 mile radius of Fayette County Courthouse

PLUM0522D 08/01/2001

	Rates	Fringes
BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN (Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:		
PIPEFITTERS & STEAMFITTERS	25.40	8.23

SUKY2003A 10/08/2001

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	16.57	7.34
GROUP 2	16.68	7.34
GROUP 3	16.86	7.34
GROUP 4	16.96	7.34

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Mobile Batch Truck Tender

GROUP 2 - Greaser; Tire Changer; & Mechanic Tender

GROUP 3 - Single Axle Dump; Flatbed; Semi-trailer or Pole Trailer when used to pull building materials and equipment;

Tandem Axle Dump; Distributor; Mixer; & Truck Mechanic

GROUP 4 - Euclid & Other Heavy Earthmoving Equipment & Lowboy; Articulator Cat; 5-Axle Vehicle; Winch & A-Frame when used in transporting materials; Ross Carrier; Forklift when used to transport building materials; & Pavement Breaker

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

KY020027 - 12

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01355

ENVIRONMENTAL PROTECTION

AMENDMENT NO. 2

-- End of Section Table of Contents --

SECTION 01355

ENVIRONMENTAL PROTECTION
AMENDMENT NO. 2

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. ARMY (DA)

AR 200-5	Pest Management

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 152 - 186	Pesticide Programs
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps on Engineers Safety and Health Requirements Manual
WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners,excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.5 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.6 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.7 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with

possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers,creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.8 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.9 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, RE

The environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

d. Description of the Contractor's environmental protection personnel training program.

e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. **[AM#2] A Storm Water/Ground Water Pollution Prevention Plan (SWGWPPP) may be substituted for this plan.**

f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil

materials including methods to control runoff and to contain materials on the site.

g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas. Protection measures required at the work site shall apply to the borrow areas including final restoration for subsequent benefical use of the land.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1 and the Ft. Knox, Kentucky Spill Prevention Control and Counter Measures Plan (SPCC) and Installation Spill Contingency Plan (ISCP). This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and the Environmental Management Division, Directorate of Base Operation Support in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

The Spill Control Plan must be completed prior to construction and submitted to Environmental Management Division, Directorate of Base Operations Support.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources; for example, the possibility to shred fallen trees and use them as mulch shall be considered as an alterative to burning or burial. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and

protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer. Prior to construction all jurisdictional wetlands shown on drawings shall be marked using orange fencing or similar means to prevent accidental disturbance of area by construction equipment.

q. A pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation Project Office specific requirements. The Contractor shall follow AR 200-5 Pest Management, Chapter 2, Section III "Pest Management Records and Reports" for data required to be reported to the Installation.

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached,as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with the special environmental requirements listed here and included at the end of this section.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings,plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

1.12 LITIGATION

If work is suspended, delayed, or interrupted due to a court order of competent jurisdiction, the Contracting Officer will determine whether the order is due in any part to the acts or omissions of the Contractor, or subcontractors at any tier, not required by the terms of the contract. IF it is determined that the order is not due to Contractor's failing, such suspension, delay, or interruption shall be considered as ordered by the Contracting Officer in the administration of the contract under the contract clause SUSPENSION OF WORK.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall obtain all needed permits or licenses except EMD, DBOS will apply for the 404 and 401 permits/Wetland Mitigation permit and the permit for temproary draw-down of the water levels in the lakes. See Contract Clause PERMITS AND RESPONSIBILITIES. The State department of natural resource, through the national polutant discharge elemination system (NPDES), requires general permits, a notice of intent, and a notice of discontinuation. The Contractor shall be responsible for implementing the terms and requirements of the appropriate permits as needed and for payment of all fees.

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or

attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) as specified in Section 02130 KPDES PERMIT FOR CONSTRUCTION. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Any temporary measures shall be removed after the area has been stabilized.

3.2.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation without prior written approval of the

Contracting Officer. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3.1 Cofferdams, Diversions, and Dewatering Operations

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body.

3.3.2 Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments. Construction of stream crossing structures shall be in compliance with Clean Water Act Section 404, Nation Wide Permit No. USACE ID Number: 1999-00332-FJD.

3.3.3 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands except as authorized herein. The Contractor shall be responsible for the protection of wetlands shown on the drawings in accordance with paragraph ENVIRONMENTAL PERMITS, REVIEWS, AND APPROVALS. Authorization to enter specific wetlands identified shall not relieve the Contractor from any obligation to protect other wetlands within, adjacent to, or in the vicinity of the construction site and associated boundaries.

3.3.3.1 Wetland Marking and Identification

Prior to construction all wetlands would be marked with orange fencing or similar means to prevent accidental disturbance of the area by the construction equipment. Wetlands will be marked in the field with wooden stakes and identified on the drawings. To identify cleared wetland and streams (20 feet on each side) after range construction, the perimeter of these systems will be marked using SIBER Stakes or SEIBERT Stakes as defined below.

a. Siber Stakes: Siber stakes consist of a a metal roadway signpost with a PVC cylinder at least 16 inches in length, marked with reflective tape 5 stripes in red, yellow and white. It shall also contain a gold-colored thermal tape wrapped around its top end as part of a thermal imagining system. The standard has been established by the Range and Land Team at the Army Training Support Center. Sieber stakes can be purchased through the Army Environmental Resource Center, Huntsville, Alabama.

b. Seibert Stakes: The stakes marked with 5 reflective bands and one non-reflective stripe on the back. The top band is 6" wide. The next four bands, continuing down, are a 3" red band, a 2" yellow band, a 3" red band and a 2" yellow band to make 16 inches. The back of each stake contains a black (non-reflective) stripe approximately 1" wide and running the full length of the stake.

The Seibert Stake is constructed of Nonmetallic Conduit Aboveground and Underground PVC type material with an inside diameter not less than 2" and an outside diameter of not more than 2-3/8". Each stake is 16" long. Reflective tape is a high intensity grade reflective pressure sensitive sheeting. Seibert Stakes are attached to metal engineer stakes using two non-rusting heavy duty hose clamps capable of adjustments from 2-9/16" to 3-1/2". Two hose clamp fasteners are required.

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise.

3.4.4 Burning

Burning will not be allowed on the project site unless specified in other sections of the specifications or authorized in writing by the Contracting Officer. The specific time, location, and manner of burning shall be subject to approval. Fires shall be confined to a closed vessel, guarded at all times, and shall be under constant surveillance until contents have burned out or have been extinguished. Burning shall completely reduce the materials to ashes.

The downrange area has been an impact area for many years and is reflected on the surface with craters, unexploded ordinances and metal fragments. Surface clearance will be provided by G3, Fort Knox Range Division.

3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.5.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal.

3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.5.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and shall manage and store hazardous waste in accordance with the Installation hazardous waste management plan. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 60 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer and the Facility Environmental Office. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.5.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored

in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. Storage of fuel on the project site shall be accordance with all Federal, State, and local laws and regulations.

3.5.5 Waste Water

Disposal of waste water shall be as specified below.

a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off-Government property in accordance with all Federal, State, Regional and Local laws and regulations or by collecting and placing it in a retention pond where suspended material can be settled out and/or the water can evaporate to separate pollutants from the water. The site for the retention pond shall be coordinated and approved with the Contracting Officer. The residue left in the pond prior to completion of the project shall be removed, tested, and disposed off-Government property in accordance with Federal, State, and local laws and regulations. The area shall be backfilled to the original grade, top-soiled and seeded/sodded.

b. For discharge of ground water, the Contractor shall surface discharge in accordance with the requirements of the NPDES or KPDES permit.

c. Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing or hydrostatic testing shall be land applied in accordance with all Federal, State, and local laws and regulations for land application.

3.6 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.7 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Contracting Officer if any have been identified. The Contractor shall protect these resources and shall be responsible for their preservation during the life of the Contract. If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all

activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.8 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.9 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the EMD, DBOS at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the EMD, DBOS and receive concurrence from the EMD, DBOS through the COR prior to the application of any pesticide associated with these specifications. Installation Project Office Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

Herbicides/pesticides would be used only around structures such as buildings, targets, and bleachers and along roadways. This would be accomplished on an as needed basis. There would be no regularly scheduled spraying. Environmental Management Division would approve all herbicide/pesticide use prior to its use. All pesticides/herbicides used on the installation would be included in the Fort Knox Integrated Pest Management Plan (IPMP).

3.9.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.9.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.9.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the clothing and personal protective equipment specified on the labeling for use during all phases of the application. Material Safety Data Sheets (MSDS)shall be available for all pesticide products.

3.9.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified Applicator shall wear clothing and personal protective equipment as specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

3.10 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.11 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.12 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.13 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The training shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.14 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

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DIVISION 02 - SITE WORK

SECTION 02220A

DEMOLITION

AMENDMENT NO. 2

-- End of Section Table of Contents --

SECTION 02220A

DEMOLITION
AMENDMENT NO. 2

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.2 GENERAL REQUIREMENTS

The work includes demolition, salvage of identified items and materials, and removal of resulting rubbish and debris. Rubbish and debris shall be removed from Government property daily, unless otherwise directed, to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the Contracting Officer. In the interest of occupational safety and health, the work shall be performed in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections. In the interest of conservation, salvage shall be pursued to the maximum extent possible; salvaged items and materials shall be disposed of as specified by the Contracting Officer.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

PCB Transformers; G, RE

Submit description of PCB transformers to be removed.

Manifests; G, RE

Manifests of any PCB transformers to be transported.

Work Plan; G, RE

The procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination

with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations in accordance with EM 385-1-1.

SD-06 Test Reports

Test Reports; G

Results of test reports of PCB transformers.

1.4 DUST CONTROL

The amount of dust resulting from demolition shall be controlled to prevent the spread of dust to occupied portions of the construction site and to avoid creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding and pollution.

1.5 PROTECTION

1.5.1 Protection of Personnel

During the demolition work the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.5.2 Protection of Existing Property

Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The Contractor shall take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Government; any damaged items shall be repaired or replaced as approved by the Contracting Officer. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

1.5.3 Protection From the Weather

Salvageable materials and equipment to remain shall be protected from the weather at all times.

1.5.4 Protection of Trees

Trees within the project site which might be damaged during demolition, and which are indicated to be left in place, shall be protected by a 6 foot high fence. The fence shall be securely erected a minimum of 5 feet from the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Any tree designated to remain that is damaged during the work under this contract shall be replaced in kind or as approved by the

Contracting Officer.

1.5.5 Environmental Protection

The work shall comply with the requirements of Section 01355 ENVIRONMENTAL PROTECTION.

1.6 BURNING

The use of burning at the project site for the disposal of refuse and debris will be permitted in open areas as approved by the Contracting Officer during daylight hours **[AM#2] and in accordance with Section 02230A CLEARING AND GRUBBING. The Contractor shall comply with the burn plan submitted to the State also included as Appendix 2 to these specifications.**

Burning shall not occur during the following conditions: Red flag warning on National Fire Data Center; 10 hour fuel moisture less than 8%, Relative humidity less than 25% and winds greater than 15 miles per hour; less than 500 meter or greater mixing height for transport winds.

1.7 USE OF EXPLOSIVES

Use of explosives will be permitted with advance written approval from the Contracting Officer and G-3/DTM Range Division.

1.8 AVAILABILITY OF WORK AREAS

Areas in which the work is to be accomplished will be available after Notice to Proceed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 EXISTING STRUCTURES

Indicated roads shall be leveled to natural ground or elevation 452.5. Cemeteries, including markers, fencing and access, shall not be disturbed.

3.2 UTILITIES

Existing utilities and equipment shall be removed and disconnected as shown or indicated. When utility lines are encountered that are not indicated on the drawings, the Contracting Officer shall be notified prior to further work in that area.

3.3 FILLING

Holes, open basements and other hazardous openings shall be filled in accordance with Section 02300 EARTHWORK FOR ROADWAYS, TRAILS, TARGETS, AND BERMS.

3.4 DISPOSITION OF MATERIAL

Title to material and equipment to be demolished, except Government salvage and historical items, is vested in the Contractor upon receipt of notice to proceed. The Government will not be responsible for the condition, loss or damage to such property after notice to proceed.

3.4.1 Salvageable Items and Material

Contractor shall salvage items and material to the maximum extent possible.

3.4.1.1 Material Salvaged for the Contractor

Material salvaged for the Contractor shall be stored as approved by the Contracting Officer and shall be removed from Government property before completion of the contract. Material salvaged for the Contractor shall not be sold on the site.

3.4.1.2 Items Salvaged for the Government

Salvaged items to remain the property of the Government shall be removed in a manner to prevent damage, and packed or crated to protect the items from damage while in storage or during shipment. Items damaged during removal or storage shall be repaired or replaced to match existing items. Containers shall be properly identified as to contents. The following items reserved as property of the Government shall be delivered to the areas designated: Transformers with potential PCB shall be turned into the post (DPW) central point area, munitions, ammunition residue, lighting protection, control panels, capacitor panels, power panels, and regulators.

3.4.1.3 Items Salvaged for the Using Service

The following items reserved as property of the using service shall be removed prior to commencement of work under this contract: Telephones located in construction area.

3.4.1.4 Historical Items

Historical items shall be removed in a manner to prevent damage. The following historical items shall be delivered to the Government for disposition: Corner stones, contents of corner stones, and document boxes wherever located on the site.

3.4.2 Unsalvageable Material

Concrete, masonry, and other noncombustible material, except concrete permitted to remain in place, shall be disposed of in the disposal areas shown. The fill in the disposal area shall remain below elevation 452.5 and after disposal is completed, the disposal area shall be uniformly graded to drain. Combustible material shall be disposed of off the site or by burning. All fluorescent ballasts removed shall be placed in a drum furnished by DEH and transported as directed by DEH for disposal.

3.5 CLEAN UP

Debris shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply.

3.6 REMOVAL OF PCB TRANSFORMER

3.6.1 Removal and Transportation of PCB's

The Contractor shall furnish all labor, materials, and equipment necessary to remove and transport PCB contaminated transformers and other associated

materials to the DEH for disposal. The Contractor shall be responsible for testing the transformers for PCB's.

All transportation will be in accordance with 49 CRF 761, as amended, Polychlorinated Biphenyls (PCB) Manufacturing, Processing, Distribution in Commerce and Use of Prohibitions.

3.6.2 Description of Transformer

A description of each transformer to include ID Number, manufacturer, voltage rating, gallons of dielectric fluid, weight, serial number, cubic feet, and PPM/PCB concentration shall be provided by the Contractor after the tests for PCB's are completed.

3.6.3 PCB Manifest

A manifest of all PCB items/materials transported to the DEH shall be kept by the Contractor. The manifest should consist of a description of the items being disposed of as required in Paragraph "Description of Transformer".

3.6.4 Spillage of PCB's

Contractor is responsible for his actions resulting in the spillage of PCB's. Responsibilities include immediate containment, cleanup and disposal as well as sampling and analysis of spill area to ensure no residual contamination remains. Disposal shall consist of transporting spillage to the DEH in sealed drums marked as to content.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02230a

CLEARING AND GRUBBING

AMENDMENT NO. 2

-- End of Section Table of Contents --

SECTION 02230a

CLEARING AND GRUBBING
AMENDMENT NO. 2

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including down timber, snags, brush, and rubbish occurring in the areas to be cleared as shown in the drawings and where grubbing is required by the specifications. Disposal by chipping and spreading is also acceptable.

1.1.2 Grubbing

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Certificates

Materials Other Than Salable Timber; G, RE.

Written permission to dispose of such products on private property shall be filed with the Contracting Officer.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CLEARING

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and shall be trimmed of all branches the heights indicated or directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means

as the circumstances require. All jurisdictional wetlands shown on the plans shall be marked with orange fencing or similar means to prevent accidental disturbance of wetland areas by construction equipment. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work.

3.2 GRUBBING

Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.3 TREE AND BRUSH REMOVAL

In clearing areas where no excavation, filling or grading operations are required clearing shall consist of removing all trees to ground level and mowing the remainder of the vegetation with a suitable rotary cutter to a height of 3 inches. Non-vegetation areas shall be turfed by seeding and maintained in accordance with SECTION 02921a SEEDING.

3.4 HAND CLEARING WETLAND AREAS

Low areas 20 feet each side of the edge of the creek bed or typical high water line whichever is greater shall be hand-cleared of trees and maintained to a height of 3 feet. All revegetation along creek side shall be as indicated in SECTION 02921a SEEDING and SECTION 02930a EXTERIOR PLANTING.

IAW the USFWS Biological Opinion, tree removal will be accomplished during the period October 15 to **[AM#2]** **March 31** (non-maternity season for Indiana Bat). If the entire area needed for the proposed upgrade can not be cleared during this period, all snags (standing dead trees) and live trees 6 inches in Diameter at Breast Height (DBH) or larger will be removed during the non-maternity season. Smaller trees and other vegetation may then be removed at any time.

Trees within the Pearl Pond area shall be removed in equal phases over two non-maternity seasons. Trees within the Pearl Pond area shall be cleared using hand tools on slopes greater than 5:1. Tree harvesters on construction mats shall be used to clear trees within the Pearl Pond area on slopes flatter than 5:1.

3.5 DISPOSAL OF MATERIALS

3.5.1 Salable Timber

All commercial forest products will be removed prior to construction.

3.5.2 Materials Other Than Salable Timber

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations, except for salable timber, shall be disposed of in the designated waste disposal area as directed by the Contracting Officer or by burning when approved in writing. **[AM#2]** **The Contractor shall comply**

with the burn plan submitted to the State also included as an Appendix to this specification section. The Contractor shall provide two (2) personnel with radio or cell phone contact during buring operations stationed in the vicinity of the range area as directed by the Contracting Officer. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed. Refuse to be burned shall be burned at specified locations and in a manner to prevent damage to existing structures and appurtenances, construction in progress, trees, and other vegetation. Burning shall be limited to the time period between **[AM#2] 1 January 2003 and 28 February 2003 for the first year of the contract and between 1 November and 28 February for the remaining years of the contract.** Burning must be coordinated with the National Weather Service (Joe Ammerman 502-962-6426) and conducted when the weather and transport winds are favorable to avoid movement of emissions toward the non-attainment area. The Contractor shall be responsible for compliance with all Federal and State laws and regulations and with reasonable practice relative to the building of fires. Burning or other disposal of refuse and debris and any accidental loss or damage attendant thereto shall be the Contractor's responsibility.

[AM#2] APPENDIX A & B - BURN PLAN

-- End of Section --

NWCG PRESCRIBED FIRE GO/NO-GO CHECKLIST

Yes	No	Questions
		Are ALL fire prescription elements met?
		Are ALL smoke management specifications met?
		Has ALL required current and projected fire weather forecast been obtained and are they it favorable?
		Are ALL planned operations personnel and equipment on-site, available, and operational?
		Has the availability of ALL contingency resources been checked, and are they available?
		Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?
		Have all the pre-burn considerations identified in the prescribed fire plan been completed or addressed?
		Have ALL the required notifications been made?
		Are ALL permits and clearances obtained?
		In your opinion, can the burn be carried out according to the prescribed fire plan and will it meet the planned objective?

If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results

PMS 421 (1/02)

(DRAFT) APPENDIX A
PRESCRIBED FIRE PLAN
(UNEXPLODED ORDNANCE (UXO) SURFACE CLEARING),
FORT KNOX, KY

NOTE: This Appendix A to Section 02230a is for the UXO surface clearing burn to be conducted by Fort Knox. The Contractor responsibilities under this burn are limited to those specified in Items 5 and 12 below.

1. Locations and Administrative Information:

a. Location: Fort Knox, KY, (Bullitt County) is the site for the construction of the Wilcox Multi-Purpose Digital Training Range. The proposed burn site begins south of Wilcox Lake and contains approximately 950 acres. **The site is located within a known military range impact area.** The approximate location by coordinates (1,000 meter, UTM Zone 16) beginning at 063/020 thence to 070/015 to 063/003 to 056/978 to 039/985 and thence back to beginning).

b. Funding, Acres and Cost by Benefiting Function: Approximate range impact acreage: 950 Acres.

Due to the inherent dangers associated with any activities taking place inside of a military range impact area, the G3 Range Control will be conducting the burn. The burn is being conducted so that a surface sweep of the area can be safely conducted to remove any found unexploded ordnance (UXO) prior to the land clearing operation for construction of the new Wilcox Tank Range.

c. Fiscal Year of Proposed Surface Burn: 2002/2003 **(Burning must only be conducted between 1 November – 28 February).**

2. History of Previous Burn:

The northern area of proposed project was burned in 1978 and surface cleared for a construction project. Wildfires in 1987 burned the area hard, killing most of the understory in the area. Mature trees suffered minor damage but were not killed. Frequent annual burning has occurred as a result of military weapons firing with little damage to the standing timber.

3. Description of Burn Unit:

a. Overstory: Approximately 50% of the acreage is mature river bottom hardwoods. The rest is open grasslands and old fields in different stages of early succession.

b. Understory: Fescue grass, tall grasses, blackberry briars, brush, etc.

c. Fuels:

(1) Grasslands (276 acres): Vegetation in the grasslands will primarily be considered as Fire Behavior Model 3 (tall grass) having 2 to 3 tons per acre of available fuel (continuous fuels less than 3 feet in height). Some acreage will be in Model 1 (short fuels less than 1 foot) and due to ground disturbance it may not carry fire on its own.

(2) Timberlands (574 acres): Surface burning of timberlands will primarily be considered as Fire Behavior Model 9 (hardwood litter) having 2 to 3.5 tons per acre of available fuel. The lowland drainages located in the woodlands may not burn without being on the low end of the humidity range (35% Relative Humidity (RH) range).

d. Estimated Total Tons for UXO Surface Burning: The estimated total tonnage of fuels to be consumed on 850 acres at 2.5 tons per acre is of 2,125 tons of fuel. This estimate is based on 100 acres of the burn unit not having fuel coverage (miles of roads, wetlands, ponds, target areas, etc.). Emissions from surface burn are as follows:

PRESCRIBED SURFACE BURN	PARTICULATE MATTER (PM)	CARBON MONOXIDE (CM)	VOLATILE ORGANICS (VOC)
TOTALS	**12.8 TONS**	**78.9 TONS**	**3.8 TONS**

4. Topography: Topography of the burn site consists of flat river bottoms with 0% to 10% slopes. This site is part of the Salt River Basin running through Fort Knox from the east and running west to the Ohio River. Downstream direction of the Salt River is south along the proposed range and then west along the south side of the site and then into the middle of Fort Knox's main range impact area. This should have a good effect on night time "down valley wind" drift for the smoke.

5. Miles of Fire Line to Establish: With a Range Division escort, the contractor will survey, and mark the construction area boundaries. At that time Range Division personnel will walk the boundary to surface check for UXO. After the surface check is completed, the contractor will bog and clear a 20' firebreak along the entire east side and south boundaries of the burn unit. The rest of the unit can use existing roads and natural barriers. There will be a vegetated buffer of approximately 400 feet along the Salt River. Flagging shall be by surveyor tape or paint. No stakes shall be driven.

6. Complexity Level: Expert. Fire cannot be managed if it escapes out of the burn unit. Therefore, the Burning Crew must know how to ring the burn units where as to insure no escapes happen. UXO considerations along with Smoke Management requirements all add to the complexity of this burn. .

7. Specific Objectives: This burn is being conducted to remove the grass and leaf litter so that the personnel doing the UXO search can locate any unexploded ordinance..

8. Special Considerations:

a. Safety: This is a known military range impact Area where high explosive ordnance has been used and some may not have exploded upon impact. Fire has been known to

detonate UXO. Therefore, the normal Army policy will be followed which is to set the fire and back off all personnel to a safe zone until they have permission to reenter the safety zone or the fire is out.

b. Fire Lines Construction: Due to not being able to keep personnel on the fire line, the line construction will need to be wider than most lines which will reduce the chance of the fire escaping while the line is not manned.

c. Smoke Management Requirements – Jefferson County is in an ozone maintenance area and Shepherdsville (Bullittt County) is listed by the EPA as a non-attainment area (see attached maps for details) which means we will not be allowed to burn on days that will have transport winds that will carry smoke from Fort Knox into these areas. Joe Ammerman, US Weather Service in Louisville (502-962-6426), will assist in providing Fort Knox forecast data for weather patterns that will predict what days burns can be conducted.

9. Public Notification: Prior to burning, the following agencies will be notified:

Name	**Contact Method**	
Mayor, City of Shepherdsville	Telephone	
Bullitt County Judge Executive	Telephone	
Bullitt County Volunteer Fire Depts. (Central Dispatch)	Telephone	
Kentucky State Police	Telephone	
Kentucky Division of Forestry	Telephone	270-766-5010
Fort Knox Fire Department.	Telephone	
Fort Knox DBOS Forestry	Telephone	502-624-8147
Fort Knox Public Affairs Office	Telephone	

10. Hazard Analysis: The Fort Knox Range Control Manager will conduct the burn in accordance with this document and using all safety procedures required for conducting prescribed burns on Army lands. State of Kentucky **Red Flag Criteria** will be considered in the planning. **(Red flag criteria occurs when the 10-hour fuel moisture is less than or equal to 8% and Relative Humidity is less than or equal to 25% and winds are greater than or equal to 15 miles per hour.)**. No burning will be take place on days where Red Flag Warnings are likely to be forecasted.

11. Contingency Plans: The Salt River will serve as the secondary break on the south and east boundaries of the burn unit. Federal land east of the Salt River has trails and a 50-foot firebreak on the US Boundary maintained by DBOS. If the fire escapes to the south or east and it spots across the river, all of the agencies listed in **Paragraph 9, Public Notification,** will be notified that there is a wildfire. Fire escapes to the west and north can be contained by back firing off of existing roads and firebreaks.

12. Prescribed Burn Execution:

a. Organization: A fireline will be placed around the footprint of the construction clear boundary. During construction of the firebreak, the contractor will have two personnel qualified

in CPR and first aid. During execution of the burn, the organization will consist of the burning boss, igniters, at least one person trained in first aid, and the appropriate number of fire fighters needed to conduct the number of acres for that day's burn. A Medical Evacuation Helicopter will be on stand by during all burns.

b. Firing, Containment, Mop-up and Patrol Procedure: Back fire the footprint of the construction clear zone. Igniters are to keep moving around the line and leave the area once the burn unit is encircled with fire. A forward observer will be posted to keep the crew informed of the fire's behavior and if any fire is spotted across the fire line.

c. Mop up will not be attempted on fires inside of known impact areas due to personnel safety concerns. Crews will be maintained in the area at a safe distance from the burning till the Burning Boss declares the fire out.

13. Smoke Management

a. Areas with existing Visibility or Air Quality Problems

(1) Identified: Jefferson Co. is in an ozone maintenance area and the City of Shepherdsville (Bullitt County) is in an Environmental Protection Agency (EPA) non-attainment area. **Burns will take place between 1 November – 28 February.**

(2) Identified Areas to be Mitigated: Prior to commencing a burn, winds must be favorable to keep the smoke management zone on and over the Fort Knox interior impact area, and away from Jefferson County and Bullitt County. No private properties are located within one mile of the proposed burn unit.

Mitigating Measures to be taken: Burning will only be allowed on days having winds out of a favorable direction to prevent air quality impacts to Jefferson or Bullitt Counties. US Weather forecasters will be consulted before burning to insure that the winds will have the durations and anticipated length of the proposed burn.

(3) Areas Requiring Patrols: Post observers to patrol and to report to the Burn Boss that the areas identified in Paragraph 13a are not receiving smoke.

14. State Burning Permit Number and Date: None required

15. Prescribed Parameters and On Site Observations: The Burn Boss will follow the attached prescription parameters.

	Region/ Forest standard	Prescription	Forecast	Forecast	Test Fire	Post Fire	Post Fire	Post Fire
DATE/TIME	- - - - - - - - -	- - - - - - - - - -						
1. FUEL MODEL	- - - - - - - - -	3 and 9			XX	XX	XX	XX
2. FUEL STICKS - NFDRS	>= 7%							
or On-Site	>= 9%							
3. MAX. TEMPERATURE								
Dormant Season	< 75@							
Growing Season	< 85@							
4. **RELATIVE HUMIDITY**								
Dormant Season	> 25%	> 30%						
Growing Season	> 25%*							
5. WIND DIRECTION	- - - - - - - - -							
6a. **WIND SPEED - 20 FT**	< 18 MPH							
6b. WIND SPEED - MIDFLAME								
7. DISPERSION INDEX					XX	XX	XX	XX
8. BURNING INDEX	< 48				XX	XX	XX	XX
9. IGNITION COMPONENT	< 50				XX	XX	XX	XX
10. MIXING HEIGHT	CHART	CHART			XX	XX	XX	XX
11a. DAYS SINCE RAIN: <1/2"					XX	XX	XX	XX
11b. DAYS SINCE RAIN: >= 1/2"					XX	XX	XX	XX
11c. AMOUNT	- - - - - - - - -				XX	XX	XX	XX
12. FIRING TECHNIQUE		Backing & Strip Head			XX	XX	XX	XX
13. IGNITION SOURCE/METHOD	- - - - - - - - -	Drip torch			XX	XX	XX	XX
14a. TRANSPORT WINDSPEED	CHART	Chart			XX	XX	XX	XX
14b. DIRECTION	- - - - - - - - -							
15a. 1 - HOUR FUEL MOISTURE	-7%- - - - - - -				XX	XX	XX	XX
15b. 10 - HOUR FUEL MOISTURE								

15c. 100 - HOUR FUEL MOISTURE	- - - - - - - - -	-----			XX	XX	XX	XX
15d. 1000 - HR FUEL MOISTURE	- - - - - - - - -	--------			XX	XX	XX	XX
15e. WOODY FUEL MOISTURE	- - - - - - - - -	-------			XX	XX	XX	XX
15f. HERB. FUEL MOISTURE	- - - - - - - - -	--------			XX	XX	XX	XX
16. SPREAD COMPONENT	- - - - - - - - -	--------			XX	XX	XX	XX
17. ENERGY RELEASE COMP.	- - - - - - - - -	--------			XX	XX	XX	XX
18. FLAME LENGTH	2 - 8 FEET							
19. DROUGHT CODE (KBDI)	<= 400				XX	XX	XX	XX
20. IGNITION PROBABILITY	<= 50				XX	XX	XX	XX
21. SCORCH HEIGHT	- - - - - - - - -	- - - - - - - - - -						

- All prescription items to be completed at planning time.
- All forecast items to be completed on the day of the burn.
- Test fire and post fire weather parameters must be taken on-site.

SMOKE DISPERSION INDEX TABLE

Transport Wind Speed (Meters/Second)	Mixing Height Minimum (Meters)
3.0	850
3.1	790
3.2	740
3.3	700
3.4	660
3.5	630
3.6	600
3.7	570
3.8	550
3.9	520
4.0	500

R8-FS-5100-6

16. Plan Preparation, Review and Approval:

Plan Prepared By:

_____**Date**_____
Dan Puckett, Forester
Fort Knox Area Office
U.S. Army Corps of Engineers
CELRL-RE-C

Plan Reviewed By:

_____**Date**_____
J. PETER HILL
Administrative Law Attorney
Office of Staff Judge Advocate

Plan Approved By:

_____**Date**_____
Albert W. Freeland
Chief, Environmental Management Division
Directorate of Base Operations Support

_____**Date**_____
Joseph V. Muscarella
COL, Engineer
Director of Base Operations Support

17. Approval for Execution of Burns:

_____Date_____
F.L. Andrews
Chief, Range Division
Directorate of Plans, Operations & Mobilization

18. Attachments (required):
1. **Descriptive Map of Area.**
2. **Risk Assessment.**
3. **Smoke Screening Map.**
4. **Organization Chart.**
5. **Weather Forecast.**
6. **Other attachments as may be necessary or desirable. (Hazard Analysis, Organizational Chart of burning crew, etc.)**

19. All requirements of burn plan are as prescribed and are predicted to remain in prescription during the expected life of the burn.

_____Date_____
Burning Boss

20. Fire Declared Out:

_____Date_____
Burning Boss

21. Notes:

22. Post Burn Evaluation:

a. Date:_____

*b. Amount Litter (%) Left:_____

c. Understory Vegetation Consumed (%):_____

*d. Spotting/Jump-overs

e. Understory Kill of Undesired Vegetation (%)_____:

*f. Any Smoke Management Violation: **Yes/No):_____DESCRIBE: _____**

*g. Any Escape: **(Yes/No):_____DESCRIBE: _____**

h. Any Complaints (explain):

i. Adverse Effects: **(Yes/No):_____DESCRIBE: _____**

J. Restoration Needed:

k. Objectives Met (results): **(Yes/No):** **DESCRIBE:**

Evaluation By:

Date

l. Recommendation for future evaluation

RISK (Potential Loss)	RISK TOLERANCE (or Consequences)	PROBABILITIES (or Loss)
FIRE (ESCAPE)		
1. Private Timber **US Timber**	1. CAN ACCEPT RISK. Can be replaced.	1. Moderate - Patrol, and mop-up throughly.
2. Private Dwelling	2. CANNOT ACCEPT RISK. Closest private property is one and a half miles to the east. Area is known as Beech Grove.	2. Moderate - Fire out early, patrol and mop-up along pvt. Have engine on site if fire escapes burn unit.
3. Fences	3. CAN ACCEPT RISK Closest fence is our boundary line fence one mile to the east.	3. Low –.
4. Plantations	4. CAN ACCEPT RISK WITH MITIGATION There are no plantations in the area.	4. Low -
5. T&E Species Indiana Bats summer roost in this area.	5. CAN ACCEPT RISK WITH MITIGATION	5. Low - All Indiana Bats should be gone by 15 Oct.
6. **Unexploded Ordnance**	**CANNOT ACCEPT RISK** **Once fire is ignited, personnel will leave area to a safe zone**	6. Low – Fires has set off UXO on other clearing. Personnel will back off to a safe zone after igniting.
SMOKE MANAGEMENT		
1. Roads - Highways	1. CAN ACCEPT RISK WITH MITIGATION.	1. Low - Burnout early, monitor frequently. Put notice of intent to burn in local papers.
A. State Highway 1494 **B.** State Highway 44 **C.** US Interstate Highway I-65 **D.** Pitts Pt. Road	A. 2 miles east B. 4 miles north C. 5 miles east D. 2 miles north	Will only burn have north east winds.
2. City of Shepherdsville **Churches/Schools** **Hospitals** **Smoke-Sensitive Person**	2. CAN NOT ACCEPT RISK Down town 4 miles NE City limits 1 ½ miles east. EPA Non-attainment Area. (our northern boundary and east boundary to Beech Grove.	2. Low - Avoid by insuring we have a northeast wind.
3. Stream Crossings **Down Drainage** **Research Plots**	3. CAN ACCEPT RISK Down river is into the middle of the Fort Knox Impact Area which is Off Limits to everyone.	3. Low - Burnout early, use prescribed dispersion, and post signs in potential problem areas.
4. Private Dwellings	4. CAN ACCEPT RISK Use of north east winds should insure that no private dwellings are impacted.	4. Low - Use good Mixing Height and Transport Wind Speed. Mop-up heavy smoke areas.
5. Night time smoke	5. CAN ACCEPT RISK Burn unit acreage will be planned and started so as to be out by dusk.	5. Low – Will not plan burn units larger than we can do during normal daylight hours.

DAILY PRESCRIBED BURN CHECKLIST

COMPARTMENT # _____
DATE _____

MANAGEMENT CODE _____
BE REVIEWED _____
SMOKE SCREENING DONE _____
WEATHER FORECAST _____
RUN BEHAVE PROGRAM _____
DISPATCH CONTACTED _____
MAPS AND PHOTOS PREPARED _____
RCW CAVITY TREES RAKED _____
SIGNATURES ON PLAN_____
PRESCRIPTION PARAMETERS MET _____
CONTACTS MADE _____
ALL PREP WORK DONE _____

BRIEFING

SAFETY _____
PERSONAL PROTECTIVE EQUIPMENT _____
HELICOPTER SAFETY _____
COMMUNICATIONS _____
SMOKE SIGNS _____
T & E PLANTS _____
SPECIAL AREAS _____ (REC. AREAS, HUNT CAMPS, BEE APAIRIES, BOAT LANDINGS, ETC.)
ASSIGN CREWS _____
TRACTOR LOCATIONS _____
BURNING FUEL/MATCHES _____
TEST FIRE OK _____

POST BURN

EVALUATION DONE _____
WEATHER RECORDED _____
ANY PROBLEMS OR COMMENTS:
_____
_____
_____
_____
_____
_____

ATV
RISK ASSESSMENT
PRESCRIBE BURNING

HIGH RISK FIRING
Cross country firing
Firing in thick fuels
Firing in boggy ground

MITIGATIONS MEASURES

Firing in any of the above situations shall be done in tandem **ONLY**
TANDEM: One ATV firing, with one ATV serving as a lookout

MODERATE RISK FIRING

Firing from plowed fireline
Firing from ditch along forest road
Firing in tandem cross country
Firing from forest travelway (moderately used)

MITIGATIONS MEASURES

Operator to check in with Firing Boss every 15 minutes.
Fire with engine support
Ensure water and fuel tanks are more than 1/2 full.
Follow the guidelines as listed in the Operations section of the ATV Torch Operations Guide.
(THESE ARE MANDATORY)

LOW RISK FIRING

Firing from graded forest road
Firing from forest travelway (well used)
Spot firing

MITIGATION MEASURES

Follow the guidelines as listed in the Operations section of the ATV Torch Operations Guide**.**
(THESE ARE MANDATORY).

_____
Burning Unit Name and Location

Organizational Chart of Burning Crew

Burning Boss:_____
(Name)

Ignition Specialist: _____

Ignition Crew: _____
_____
_____

Fireline Crew Boss: _____

Crew Members:_____, _____,
_____, _____,
_____, _____,
_____, _____,
_____, _____,
_____, _____

Equipment Boss: _____

Equipment operators:_____
_____
_____

Observer: _____
Observer:_____

List type of radio communications that will be used:_____, and how many are available_____.

_____ Date_____
Burn Boss signature

NWCG PRESCRIBED FIRE GO/NO-GO CHECKLIST

Yes	No	Questions
		Are ALL fire prescription elements met?
		Are ALL smoke management specifications met?
		Has ALL required current and projected fire weather forecast been obtained and are they it favorable?
		Are ALL planned operations personnel and equipment on-site, available, and operational?
		Has the availability of ALL contingency resources been checked, and are they available?
		Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?
		Have all the pre-burn considerations identified in the prescribed fire plan been completed or addressed?
		Have ALL the required notifications been made?
		Are ALL permits and clearances obtained?
		In your opinion, can the burn be carried out according to the prescribed fire plan and will it meet the planned objective?

If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results

PMS 421 (1/02)

(DRAFT) APPENDIX B
PRESCRIBED FIRE AND SMOKE MANAGEMENT PLAN FOR CONSTRUCTION SITE DISPOSAL OF ALL WOODY DEBRIS
ON THE WILCOX MULTI-PURPOSE DIGITAL TRAINING RANGE
(IMPACT ZONE ACREAGE)
FORT KNOX, KY

1. Location and Administrative Information:

a. Location: Fort Knox, Kentucky (Bullitt County) is the proposed site for the construction of the Wilcox Multi-Purpose Digital Training Range. The proposed burn site begins south of Wilcox Lake and contains approximately 950 acres. **The site is located within a known military range impact area.** The approximate location by coordinates (1,000 meter, UTM Zone 16) beginning at 063/020 thence to 070/015 to 063/003 to 056/978 to 039/985 and thence back to beginning).

b. Funding, Acres and Cost by Benefiting Function: Approximate Impact Area acreage: 950 Acres.

Due to the inherent dangers associated with any activities taking place inside of a military range impact area, the G3 Range Manager/Directorate of Plans, Training and Mobilization will monitor and direct unexploded (UXO) safety concerns as needed throughout all phases of construction. The range construction being proposed will be contracted out by the Louisville District, Army Corps of Engineers to a private construction contractor who will have the responsibilities for the land clearing, burning, and construction of the Wilcox Multi-Purpose Digital Training Range. This plan will be incorporated into the District's construction contract and the contractor will abide by all the terms listed in this plan. In portions of the construction project outside the designated range/impact, timber will be harvested and the remaining logging slash will be chipped.

c. Fiscal Year of Proposed Burns: 2002/2003/2004.

2. History of Previous Burns:

The northern area of this proposed project area was surface burned in 1978 and surface cleared for a range construction project. A wildfire in 1987 burned the area hard and killed most of the understory in the area. Mature trees suffered minor damage but were not killed. Frequent annual surface burning has occurred as a result of military weapons firing with little damage to the standing timber.

3. Description of Burn Unit:

All woody material (trees, brush, slash, stumps, etc.) that exists within the construction zone south of Wilcox Lake is to be burned.

a. Overstory: Overstory consists of mature timber stands and pole timber stands as described below.

(1) Mature timber stands: Approximately 574 acres of the site is mature river bottom hardwoods. These mature stands will have an estimated 100 tons of fuel per acre. This tonnage is based on data from the Fort Campbell Forest Management Plan that calculates volume on tons verses Fort Knox's Forest Plan that is based on volume of board feet of sawtimber. The rest of the acreages are open grasslands, old fields in different stages of early succession to hardwoods to include pole timber stands (trees having less than 10 inches in diameter).

(2) Pole timber stands (Early Secession Timberlands): Approximately 183 acres of the site is in young pole timber ranging from 10 tons of wood per acre to 40 tons per acre.

	Acres	**Tons/Acre**	**Total Fuel Load**
	110	10	1,100 Tons
	35	20	700 Tons
	24	30	720 Tons
	14	40	560 Tons
TOTALS	183 Acres		3,080 Tons

b. Understory: Prior to construction, the Army will conduct a surface burn of the construction site and conduct an Unexploded Ordnance (UXO) surface sweep of the area. Light fuels will have already been burned. Total fuel estimated for this Surface Burn was 2,125 tons consisting mostly of leaves, fescue grass, tall grasses, blackberry briars, brush, etc.

c. Open lands: There are approximately 190 acres that will not have enough fuels to be considered. These are borrow sites, target areas (currently bare ground), several miles of roads and ponds/wetlands that will not be cleared.

4. Timberland fuels to be burned within the scope of this plan:

a. Mature Timberlands (574 acres): All estimates of sawtimber, pole timber, sapling, and brush (total wood removal) that exist on this acreage will use 100 tons per acre calculation. No timber stands were inventoried within the impact area due to safety concerns. All estimates to include acreages are based on drive by inspections, aerial photos (current and past), construction maps (CoE), and past experiences working on these types of disposal. Estimate of fuel on 574 acres = Total of 57,400 tons

b. Early Secession Timberlands (183 acres): As described above, the area contains approximately 183 acres of young timber ranging from under stocked areas with only 10 tons per acre, to fully stocked areas that have 40 tons per acre. Total tonnage of fuels to be consumed will be estimated as stated above. Estimate of fuel on 183 acres = Total of 3,080 tons.

c. Estimated Total Tons for this phase of construction is 60,480 tons:

BURNING MATURE TREES	PARTICULATE MATTER (PM)	CARBON MONOXIDE (CO)	VOLATILE ORGAINICS (VOC)
TOTALS	**364.3 Tons**	**2,246.4 Tons**	**109.3 Tons**

5. Topography: Topography of the burn site consists of flat river bottoms with 0% to 10% slopes. This site is part of the Salt River Basin running through Fort Knox from the east and running west to the Ohio River. Downstream direction of the Salt River is south along the proposed range and then west along the south side of the site and then into the middle of Fort Knox's main range impact area. This should have a good effect on night time "down valley wind" drift for the smoke.

6. Miles of Fire Line to Establish: None required. A surface burn of vegetation will be conducted prior to any construction activities. A fire line approximate 3.75-miles in length will be constructed prior to the prescribed surface burn (Appendix A) along the entire east side and south boundaries of the burn unit. The Army prescribed surface burn for UXO removal will have already taken place so ground fuels will be gone.

7. Complexity Level – Expert: Fire cannot be managed if it escapes out of the burn unit; therefore, the Burning Crew must know how to consider weather, burning indexes, spotting percentages, ignition techniques, etc. UXO considerations along with Smoke Management requirements all add to the complexity of this burn. .

8. Specific Objectives: Under normal construction contracts, all merchantable timber/saw-logs, and pulpwood would be salvaged prior to land clearing. However, this construction site is located mainly inside of the Fort Knox Range Impact Area. Most of the acreage is directly down range of the firing line. Tanks, artillery, jets, and helicopters have all fired into this timber. Some of the ordnance was high explosive and may not have detonated on impact. It is known that most of the trees down range have bullets and shrapnel in them. Therefore, Fort Knox officials have determined that this timber is non- merchantable. Unexploded ordnance (UXO) has been found inside of trees during past logging operations on post. **UXO cannot be exported out of a known range impact area.** The construction contract requires the area to be cleared of all vegetation and trees. Wetlands areas will be marked and timber removed as indicated in the Record of Decision. The range construction site, once completed, will be maintained in a grass cover so as not to impede the line of site from the firing line to the targets. Chipping and grinding of the timber and slash within the range impact area were considered and rejected due to personnel safety issues concerning UXO in trees and the damage metal in the trees would pose to the equipment. The 60,000+ tons of debris if chipped would also pose a large problem for a disposal site. We would not be allowed to leave it in the flood plane. Windrowing this volume of timber off site was also considered and rejected. It would take up our stream bank protection zone, have it in a flood plane, and pose a fire risk in out years. **Therefore, it has been determined that Fort Knox's only feasible option for disposal of the woody material inside of the range impact area will be by piling and burning.**

9. Special Considerations:

a. Safety: This is a known military range impact area where high explosive ordnance has been used and some may not have exploded upon impact. Fire has been known to detonate UXO. Therefore, the normal Army policy will be followed, which is to set the piles of timber on fire and back off all personnel until they have permission to reenter the safety zone around the burned piles.

b. Fire Lines Construction: The construction site will be cleared with dozers, pans, track hoes, high lifts, etc. With the exception of the wetlands, the area will be bare during clearing operations. Ground fuels will be non-existent. Piles of timber and slash will be placed 100 yards inside the clearing boundary to keep the chances of spotting to areas outside of the construction zone minimal.

c. Smoke Management Requirements: Jefferson Co is in an Ozone Maintenance Area and Shepherdsville (Bullitt County) is listed by the Environmental Protection Agency as a non-attainment area (see attached maps for details). The air quality classifications in Jefferson and Bullitt Counties require Fort Knox to burn only on days that have transport winds that will carry smoke away from these areas. Procedures for wind/smoke management are as follows:

(1) Winds generally from the northeast will be needed for the burn. Joe Ammerman of the US Weather Service in Louisville (502-962-6426) will assist in providing Fort Knox forecast data for weather patterns that will predict what days burns can be conducted.

(2) **Burns can only be conducted during 1 November – 28 February.**

(3) To determine probable daytime smoke impact areas, the fire boss will follow Smoke Screening Procedures that require plotting the wind direction from the burn area for 10 miles in heavy fuels. On a map, the fire boss will draw lines from each side of the fire at an angle of 30 degrees from the wind direction and draw an arc at the distance indicated above.

(4) Next, the fire boss should move down the map following the drainage of the Salt River in all directions for one-half the distance above and draw a line for the night time smoke impact area. Identify and mark all smoke-sensitive areas located on this same map (see attached map for special smoke protection areas). Critical smoke sensitive areas must not fall within 3 miles of the affected smoke plume path.

10. Public Notification: Prior to burning, the following agencies will be notified.

Name	**Contact Method**	
Mayor, City of Shepherdsville	Telephone	
Bullitt County Judge Executive	Telephone	
Bullitt County Volunteer Fire Depts. (Central Dispatch)	Telephone	
Kentucky State Police	Telephone	
Kentucky Division Forestry	Telephone	270-766-5010
Fort Knox Fire Department.	Telephone	
Fort Knox DBOS Forestry	Telephone	502-624-8147
Fort Knox Public Affairs Office	Telephone	502-624-
Fort Knox Range Control	Telephone	502-624-2125

11. Hazard Analysis: The Corps of Engineers' (COE) Construction Contractor will conduct the burning in accordance with this Plan, Army policy for conducting Prescribed Burns on Army lands, COE Construction Contract Plans and Specifications, and EM 385 1-1 Safety Manual. The Contractor will submit a Safety Plan to the Contracting Officer's Representative (COR) for this phase of construction. The COR will insure that all listed Hazard Analysis are addressed and that all of the contractor's employees, sub-contractors on site have attended UXO safety training. State of Kentucky **Red Flag Criteria** will be considered in the planning. **(Red flag criteria occurs when the 10-hour fuel moisture is less than or equal to 8% and Relative Humidity is less than or equal to 25% and winds are greater than or equal to 15 miles per hour.)**. No burning will take place on days where Red Flag Warnings are likely to be forecast within the next 48 hours.

12. Contingency Plans: The Salt River will serve as the secondary break on the south and east boundaries of the burn unit. DBOS maintains a 50-foot wide firebreak on federally owned land east of the Salt River. If the fire escapes to the south or east and it spots across the river, all of the above Departments listed under **Paragraph 10, Public Notification,** will be notified that there is a wildfire. The lands to the south and east involve other impact areas. Because of possible detonation of UXO, civilian assistance is not permitted in the impact area. Fire escapes to the west and north can be contained by back firing off existing roads and firebreaks.

13. Timber will be piled for burning*: Smoke Management Guide for Prescribed and Wildland Fire 2001 Edition* (PMS 420-2, NFES1279, December 2001) states "FUEL LOADING – The heaviest fuel loading a prescribed fire manager encounters are normally in piled logging debris. This type of burning can have the most adverse impact on air quality. FUEL CONTINUITY – Fuel continuity (both horizontal and vertical) affects smoke production because it affects the amount of fuel consumed. Most significantly, sustained ignitions will not occur when the spacing between fuel particles is too large. ***Guide For Prescribed Fire in Southern Forest*** (PMS 431-2, NFES 2108), page 27, states, "Material should be piled and not windrowed." "The biggest deterrent to windrow burning, however, is that it causes a high percentage of all smoke incidents. Large volumes of fuel, including larger pieces that contain a

lot of moisture, are consumed. However, oxygen for good combustion is lacking, especially in large piles and wide windrows. Soils are often mixed in, resulting in a fire that continues to smolder for days or weeks and creating air quality problems because the smoke produced by smoldering combustion is not hot enough to rise into the atmosphere. Smoke stays near the ground where it cools even more, drifting and concentrating in low areas. To make matters worse the smoke often mixes with humid air to produce fog. For these reasons, air quality regulations prohibit pile and windrow burning in some areas. Piles are preferable to windrows. Keep piles small and minimize the amount of soil in them so surface water can pass through and the debris can dry quickly. Always pile when ground surface is dry. Allow fresh logging debris to cure first and to dry after rain. Burn when the atmosphere is neutral to slightly unstable, but not unstable enough to create control problems."

Guidance for burning piles:

- Pile burning will be conducted after fuels have had time to dry out.
- Soil will be kept out of piles.
- Treetops will be busted up so the pile can be tightly packed.
- Burn must have the desired mixing heights and approved (directional) transport winds for a two to three day period of time. See Smoke Management Requirement above.
- Burn area should be as small as economically practical.
- Ignite piles around the perimeter and if possible get some fuels into the center of the piles, which gives a large heat source for ignition.
- Neutral to unstable weather conditions for good smoke dispersion (generally do not occur after sunset). Ignition will be early in the day, not late in the afternoon.
- Safety UXO Consideration - Once ignited, personnel will be pulled back to a safe zone until it has been declared safe to reenter the burn site.
- Piles will be located inside of the construction site boundary at least 100 yards.
- Burn will be conducted only during the time period of 1 November – 28 February.

14. Prescribed Burn Execution:

a. Organization: Burning Boss, Ignition Specialist, Equipment Boss, and 2 Observers available on construction site. The contractor will have two personnel qualified in CPR or first aid. A Medical Evacuation Helicopter will be on stand by during all burns.

b. Firing, Containment, Mop-up and Patrol Procedure: Piles will be ignited along its perimeter and gelled gas/diesel sprayed into the center for a large and rapid heat source for ignition. Once started, the igniter will proceed to a safe zone. Once the fire has died down and the area is declared safe to re-enter, dozers can bunch up the piles for better combustion. Fires will not be extinguished if the area has not been declared safe to reenter due to the danger from UXO detonation. If the procedure results in spotting that start fires outside of the construction zone, Range Control must be contacted immediately. **The Contractor will not attempt to extinguish fires inside of known impact areas** due to personnel safety concerns. Crews will be maintained in the area at a safe distance from the burning. Range Control will evaluate the situation and make decisions concerning getting the fire contained.

15. Smoke Management

a. Areas with existing Visibility or Air Quality Problems

(1) Identified: Jefferson County is in an ozone maintenance area and Bullitt County and the City of Shepherdsville are in an Environmental Protection Agency (EPA) non-attainment area. **Burns will take place between 1 November – 28 February.**

(2) Identified Areas to be Mitigated: Must have winds generally from the northeast which will keep the smoke management zone on and over the Fort Knox interior impact area, and away from the two mentioned non-attainment areas. No private properties are located with one mile of the proposed burn unit.

Mitigating Measures to be taken: Burning will only be allowed on days having winds generally out of the northeast. US Weather forecasters will be consulted before burning to insure that the winds will have the durations to last the length of the burn being proposed. **Burning will only be conducted during 1 November – 28 February.**

(3) Identified Areas Requiring Patrol: Post observers to patrol and to report to the Burn Boss that the areas identified in Paragraph 15 are not receiving smoke.

Mitigating Measures to be taken: While fires are burning, someone will be on site to monitor the fire's behavior until the Burning Boss has declared the fire out.

16. State Burning Permit Number and Date: None required.

17. Prescribed Parameters and On Site Observations: The Burn Boss will follow the attached prescription parameters.

	Region/ Forest standard	Prescription	Forecast	Forecast	Test Fire	Post Fire	Post Fire	Post Fire
DATE/TIME	- - - - - - - - -	- - - - - - - - - -						
1. FUEL MODEL	- - - - - - - - -	13			XX	XX	XX	XX
2. FUEL STICKS - NFDRS	>= 7%							
or On-Site	>= 9%							
3. MAX. TEMPERATURE								
Dormant Season	< 75@							
Growing Season	< 85@							
4. **RELATIVE HUMIDITY**								
Dormant Season	> 25%	> 30%						
Growing Season	> 25%*							
5. WIND DIRECTION	- - - - - - - - -	NE only						
6a. **WIND SPEED - 20 FT**	< 18 MPH							
6b. WIND SPEED - MIDFLAME								
7. DISPERSION INDEX					XX	XX	XX	XX
8. BURNING INDEX	< 48				XX	XX	XX	XX
9. IGNITION COMPONENT	< 50				XX	XX	XX	XX
10. MIXING HEIGHT	CHART	CHART			XX	XX	XX	XX
11a. DAYS SINCE RAIN: <1/2"					XX	XX	XX	XX
11b. DAYS SINCE RAIN:>= 1/2"					XX	XX	XX	XX
11c. AMOUNT	- - - - - - - - -				XX	XX	XX	XX
12. FIRING TECHNIQUE		Ring Fire w/gelled petroleum fuel mixture			XX	XX	XX	XX
	- - - - - - - - -	Gelled			XX	XX	XX	XX

13. IGNITION SOURCE/METHOD		mixture						
14a. TRANSPORT WINDSPEED	CHART	Chart			XX	XX	XX	XX
14b. DIRECTION	- - - - - - - - -	NE only						
15a. 1 - HOUR FUEL MOISTURE	- - - - - - - - -				XX	XX	XX	XX
15b. 10 - HOUR FUEL MOISTURE								
15c. 100 - HOUR FUEL MOISTURE	- - - - - - - - -	-----			XX	XX	XX	XX
15d. 1000 - HR FUEL MOISTURE	- - - - - - - - -	--------			XX	XX	XX	XX
15e. WOODY FUEL MOISTURE	- - - - - - - - -	-------			XX	XX	XX	XX
15f. HERB. FUEL MOISTURE	- - - - - - - - -	--------			XX	XX	XX	XX
16. SPREAD COMPONENT	- - - - - - - - -	--------			XX	XX	XX	XX
17. ENERGY RELEASE COMP.	- - - - - - - - -	--------			XX	XX	XX	XX
18. FLAME LENGTH	----------							
19. DROUGHT CODE (KBDI)	<= 400				XX	XX	XX	XX
20. IGNITION PROBABILITY	<= 50				XX	XX	XX	XX
21. SCORCH HEIGHT	- - - - - - - - -	- - - - - - - - - -						

- All prescription items to be completed at planning time.
- All forecast items to be completed on the day of the burn.
- Test fire and post fire weather parameters must be taken on-site.

SMOKE DISPERSION INDEX TABLE

Transport Wind Speed (Meters/Second)	Mixing Height Minimum (Meters)
3.0	850
3.1	790
3.2	740
3.3	700
3.4	660
3.5	630
3.6	600
3.7	570
3.8	550
3.9	520
4.0	500

R8-FS-5100-6

18. Plan Preparation, Review and Approval:

Plan Prepared By:

_____**Date**_____
Dan Puckett, Forester
Fort Knox Area Office
U.S. Army Corps of Engineers
CELRL-RE-C

Reviewed By:

_____**Date**_____
J. PETER HILL
Administrative Law Attorney
Office of Staff Judge Advocate

Plan Approved By:

_____**Date**_____
Albert W. Freeland
Chief, Environmental Management Division
Directorate of Base Operations Support

_____**Date**_____
Joseph V. Muscarella
COL, Engineer
Director of Base Operations Support

19. Approval for Execution of Burns:

_____**Date**_____
Contractor Burning Boss

_____**Date**_____
Resident Engineer
Corps of Engineers, Fort Knox Area Office

20. Attachments (required):
1. Descriptive Map of Area.
2. Risk Assessment.
3. Smoke Screening Map.
4. Organization Chart.
5. Weather Forecast.
6. Other attachments as may be necessary or desirable. (Hazard Analysis, Organizational Chart of burning crew, etc.)

21. All requirements of burn plan are as prescribed and are predicted to remain in prescription during the expected life of the burn.

_____**Date**_____
Burning Boss

22. Fire Declared Out:

_____**Date**_____
Burning Boss

23. Notes:

24. Post Burn Evaluation:

a. Date:_____

*b. Amount Litter (%) Left:_____

c. Understory Vegetation Consumed (%):_____

*d. Spotting/Jump-overs

e. Understory Kill of Undesired Vegetation (%)_____:

*f. Any Smoke Management Violation: **(Yes/No):_____DESCRIBE: _____**

*g. Any Escape: **(Yes/No):_____DESCRIBE: _____**

h. Any Complaints (explain):

i. Adverse Effects: **(Yes/No):_____DESCRIBE: _____**

J. Restoration Needed:

k. Objectives Met (results): **(Yes/No):** **DESCRIBE:**

Evaluation By:

Date

l. Recommendation for future evaluation

RISK (Potential Loss)	RISK TOLERANCE (or Consequences)	PROBABILITIES (or Loss)
FIRE (ESCAPE)		
1. Private Timber **US Timber**	1**. CAN ACCEPT RISK**. Can be replaced.	1. Moderate - Patrol, and mop-up throughly.
2. Private Dwelling	2**. CANNOT ACCEPT RISK**. Closest private property is one and a half miles to the east. Area is known as Beech Grove.	2. Moderate - Fire out early, patrol and mop-up along pvt. Have engine on site if fire escapes burn unit.
3. Fences	3. **CAN ACCEPT RISK** Closest fence is our boundary line fence one mile to the east.	3. Low –.
4. Plantations	4. **CAN ACCEPT RISK WITH MITIGATION** There are no plantations in the area.	4. Low -
5. T&E Species **Indiana Bats summer roost in this area.**	5. **CAN ACCEPT RISK WITH MITIGATION**	5. Low - All Indiana Bats should be gone by 15 October.
6. Unexploded Ordnance	6. **CAN NOT ACCEPT RISK** Once piles are ignited, personnel will leave area to a safe zone.	6. Low – Fires has set off UXO on other clearing. Personnel will back off to a safe zone after igniting piles.
SMOKE MANAGEMENT		
1. Roads - Highways **A.** State Highway 1494 **B.** State Highway 44 **C.** US Interstate Highway I-65 **D.** Pitts Pt. Road	1. **CAN ACCEPT RISK WITH MITIGATION.** A. 2 miles east B. 4 miles north C. 5 miles east D. 2 miles north	1. Low - Burnout early, monitor frequently. Put notice of intent to burn in local papers. Will only burn have north east winds. Will not have any critical area in the smoke plume projected 3 mile impacted area.
2. City of Shepherdsville **Churches/Schools** **Hospitals** **Smoke-Sensitive Person**	2. **CAN NOT ACCEPT RISK** Downtown 4 miles NE City limits 1 ½ miles east. EPA Non-attainment Area. (our northern boundary and east boundary to Beech Grove.	2. Low - Avoid by insuring we have a northeast wind.
3. Stream Crossings **Down Drainage** **Research Plots** **Night time burning**	3. **CAN ACCEPT RISK** Down river is into the middle of the Fort Knox Impact Area which is Off Limits to everyone. Same direction that we are targeting our smoke plume to go.	3. After sunset, smoke is likely to drift upto 5 miles down the Salt River into the middle of Ft Knox's Impact Area. Will have no impact on operations. Area is off limits to all personnel.
4. Private Dwellings	4. **CAN ACCEPT RISK** Use of north east winds should insure that no private dwellings are impacted.	4. Low - Use good Mixing Height and Transport Wind Speed. Mop-up heavy smoke areas.

DAILY PRESCRIBED BURN CHECKLIST

COMPARTMENT # _____
DATE _____

MANAGEMENT CODE _____
BE REVIEWED _____
SMOKE SCREENING DONE _____
WEATHER FORECAST _____
RUN BEHAVE PROGRAM _____
DISPATCH CONTACTED _____
MAPS AND PHOTOS PREPARED _____
RCW CAVITY TREES RAKED _____
SIGNATURES ON PLAN_____
PRESCRIPTION PARAMETERS MET _____
CONTACTS MADE _____
ALL PREP WORK DONE _____

BRIEFING

SAFETY _____
PERSONAL PROTECTIVE EQUIPMENT _____
HELICOPTER SAFETY _____
COMMUNICATIONS _____
SMOKE SIGNS _____
T & E PLANTS _____
SPECIAL AREAS _____ (REC. AREAS, HUNT CAMPS, BEE APAIRIES, BOAT LANDINGS, ETC.)
ASSIGN CREWS _____
TRACTOR LOCATIONS _____
BURNING FUEL/MATCHES _____
TEST FIRE OK _____

POST BURN

EVALUATION DONE _____
WEATHER RECORDED _____
ANY PROBLEMS OR COMMENTS:
_____
_____
_____

_____Date_____
Burning Boss

ATV
RISK ASSESSMENT
PRESCRIBED BURNING

HIGH RISK FIRING

Cross country firing
Firing in thick fuels
Firing in boggy ground

MITIGATIONS MEASURES

Firing in any of the above situations shall be done in tandem ONLY
TANDEM: One ATV firing, with one ATV serving as a lookout

MODERATE RISK FIRING

Firing from plowed fire line
Firing from ditch along forest road
Firing in tandem cross country
Firing from forest travel way (moderately used)

MITIGATIONS MEASURES

Operator to check in with Firing Boss every 15 minutes.
Fire with engine support
Ensure water and fuel tanks are more than 1/2 full.
Follow the guidelines as listed in the Operations section of the ATV Torch Operations Guide. (THESE ARE MANDATORY)

LOW RISK FIRING

Firing from graded forest road
Firing from forest travel way (well used)
Spot firing

MITIGATION MEASURES

Follow the guidelines as listed in the Operations section of the ATV Torch Operations Guide. (THESE ARE MANDATORY).

_____

Burning Unit Name and Location

Organizational Chart of Burning Crew

Burning Boss: _____
(Name)

Ignition Specialist: _____

Ignition Crew: _____

_____

Equipment Boss: _____

Equipment operators: _____

First Aid or CPR Specialist:_____

Observer: _____

Observer:_____

List type of radio communications that will be used: _____, and how many are available_____.

_____ **Date**_____
Burn Boss signature

NWCG PRESCRIBED FIRE GO/NO-GO CHECKLIST

Yes	No	Questions
		Are ALL fire prescription elements met?
		Are ALL smoke management specifications met?
		Has ALL required current and projected fire weather forecast been obtained and are they it favorable?
		Are ALL planned operations personnel and equipment on-site, available, and operational?
		Has the availability of ALL contingency resources been checked, and are they available?
		Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?
		Have all the pre-burn considerations identified in the prescribed fire plan been completed or addressed?
		Have ALL the required notifications been made?
		Are ALL permits and clearances obtained?
		In your opinion, can the burn be carried out according to the prescribed fire plan and will it meet the planned objective?

If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results

PMS 421 (1/02)

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02930A

EXTERIOR PLANTING

AMENDMENT NO. 2

-- End of Section Table of Contents --

SECTION 02930A

EXTERIOR PLANTING
AMENDMENT NO. 2

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)

ANLA Z60.1	(1996) Nursery Stock

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A300	(1995) Tree Care Operations - Trees, Shrubs and other Woody Plant Maintenance

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602	(1995a) Agricultural Liming Materials
ASTM D 5034	(1995) Breaking Strength and Elongation of Textile Fabrics (Grab Test)
ASTM D 5035	(1995) Breaking Force and Elongation of Textile Fabrics (Strip Method)
ASTM D 5268	(1992; R 1996) Topsoil Used for Landscaping Purposes

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment

A listing of equipment to be used for the planting operation.

Plant Establishment Period; G, RE

Calendar time period for the plant establishment period. When there is more than one establishment period, the boundaries of the planted areas covered for each period shall be described.

Maintenance Record

Maintenance work performed, quantity of plant losses, and replacements; and diagnosis of unhealthy plant material.

Application of Pesticide; G, RE

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

SD-07 Certificates

Plant Material
pH Adjuster
Fertilizer
Organic Mulch
Pesticide; G, RE

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

a. Plant Material: Classification, botanical name, common name, size, quantity by species, and location where grown.

b. pH Adjuster: Sieve analysis and calcium carbonate equivalent.

c. Fertilizer: Chemical analysis and composition percent.

d. Organic Mulch: Composition, source, and treatment against fungi growth.

e. Pesticide. EPA registration number and registered uses.

1.3 SOURCE INSPECTIONS

Plant materials shall be inspected at the growing site and tagged or otherwise approved for delivery by the Contracting Officer.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

1.4.1.1 Plant Material Identification

Plant material shall be identified with attached, durable, waterproof labels and weather-resistant ink, stating the correct botanical plant name and size.

1.4.1.2 Protection During Delivery

Plant material shall be protected during delivery to prevent desiccation and damage to the branches, trunk, root system, or earth ball. Branches shall be protected by tying-in. Exposed branches shall be covered during transport.

1.4.1.3 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4.1.4 Pesticide Material

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the Environmental Protection Agency (EPA) registration number and the manufacturer's registered uses.

1.4.2 Inspection

Plant material shall be inspected upon arrival at the jobsite by the Contracting Officer, as specified herein. Plant material shall be well shaped, vigorous and healthy with a healthy, well branched root system, free from disease, harmful insects and insect eggs, sun-scald injury, disfigurement or abrasion. Plant material shall be checked for unauthorized substitution and to establish nursery grown status. Plant material showing desiccation, abrasion, sun-scald injury, disfigurement, or unauthorized substitution shall be rejected. The plant material shall exhibit typical form of branch to height ratio; and meet the caliper and height measurements specified. Plant material that measures less than specified, or has been poled, topped off or headed back, shall be rejected. Container-grown plant material shall show new fibrous roots and the root mass shall contain its shape when removed from the container. Plant material with broken or cracked balls; or broken containers shall be rejected. Bare-root plant material that is not dormant or is showing roots were pulled from the ground shall be rejected. Other materials shall be inspected for compliance with paragraph PRODUCTS. Open soil amendment containers or wet soil amendments shall be rejected. Topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material larger than 1-1/2 inch diameter shall be rejected. Topsoil that contains viable plant material and plant parts shall be rejected. Unacceptable material shall be removed from the job site.

1.4.3 Storage

1.4.3.1 Plant Material Storage

Plant material not installed on the day of arrival at the site shall be stored and protected in designated areas. Plant material shall not be stored longer than 30 days. Plant material shall be protected from direct exposure to wind and sun. Bare-root plant material shall be heeled-in. All plant material shall be kept in a moist condition by watering with a fine mist spray until installed.

1.4.3.2 Other Material Storage

Storage of other material shall be in designated areas. Soil amendments

shall be stored in dry locations and away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with planting operation material.

1.4.4 Handling

Plant material shall not be injured in handling. Cracking or breaking the earth ball of balled and burlapped plant material shall be avoided. Plant material shall not be handled by the trunk or stems. Materials shall not be dropped from vehicles.

1.4.5 Time Limitation

a. Mulch: Limitation of time between installing plant and placing mulch is 48 hours.

b. Trunk Wrap: Limitation of time between installing deciduous trees and wrapping the trunks is 24 hours.

c. Transplanting Existing Plants: Limitation of time between digging and replanting existing plant mateiral is one hour.

1.5 WARRANTY

Furnished plant material shall have a warranty for plant growth to be in a vigorous growing condition for a minimum 12 month period. A minimum 12 month calendar time period for the warranty of plant growth shall be provided regardless of the contract time period. When plant material is determined to be unhealthy in accordance with paragraph PLANT ESTABLISHMENT PERIOD, it shall be replaced once under this warranty.

PART 2 PRODUCTS

2.1 PLANT MATERIAL

2.1.1 Plant Material Classification

The plant material shall be nursery grown stock conforming to ANLA Z60.1 and shall be the species specified.

2.1.2 Plant Schedule

2.1.2.1 Stream Bank Revegetation Schedule

Low areas 20 feet each side of the edge of the creek bed or typical high water line whichever is greater shall be revegetated using the following plant schedule:

Botanical Name	Common Name	Height
Cornus Amomum	Silky Dogwood	1'
Corylus Americana	American Hazelnut	1'
Prunus Americana	Wild Plum	1'
C. Racemosa	Gray Dogwood	1'
C. Oblique	Pale Dogwood	1'
Sambucus Canadenis	Common Elder	1'
Euonymus Atropurpureus	Wahoo	1'
E. Americanus	Strawberry Bush	1'
Ptelea Trifoliate	Wafer-Ash	1'

Botanical Name	Common Name	Height
Forestaria Acuminata	Swamp Privet	1'
Hamamelis Virginiana	Witch-Hazel	1'
Arundinaria Gigantean	Cane	1'
Cephelanhtus Occidentalis	Button Bush	1'
Planera Aquatica	Water Elm	1'
Alnus Serrulata	Common Alder	1'
Salix Sericea	Silky Willow	1'
S. Rigida	Heartleaf Willow	1'
S. Interior	Sandbar Willow	1'

Method of handling and shipping, caliper, and other special characteristics shall conform to ANLA Z60.1 and as specified herein.

2.1.3 Substitutions

Substitutions will not be permitted without written request and approval from the Contracting Officer.

2.1.4 Quality

Well shaped, well grown, vigorous plant material having healthy and well branched root systems in accordance with ANLA Z60.1 shall be provided. Plant material shall be provided free from disease, harmful insects and insect eggs, sun-scald injury, disfigurement and abrasion. Plant material shall be free of shock or damage to branches, trunk, or root systems, which may occur from the digging and preparation for shipment, method of shipment, or shipment. Plant quality is determined by the growing conditions; method of shipment to maintain health of the root system; and growth of the trunk and crown as follows.

2.1.5 Growing Conditions

Plant material shall be native to or well-suited to the growing conditions of the project site. Plant material shall be grown under climatic conditions similar to those at the project site.

2.1.6 Method of Shipment to Maintain Health of Root System

2.1.6.1 Balled and Burlapped (BB) Plant Material

Ball size and ratio shall be in accordance with ANLA Z60.1. The ball shall be of a diameter and depth to encompass enough fibrous and feeding root system necessary for the full recovery of the plant. The plant stem or trunk shall be centered in the ball. All roots shall be clean cut at the ball surface. Roots shall not be pulled from the ground. Before shipment the root ball shall be dipped in gels containing mycorrhizal fungi inoculum. The root ball shall be completely wrapped with burlap or other suitable material and securely laced with biodegradable twine.

2.1.6.2 Balled and Potted (Pot) Plant Material

Ball size and ratio shall be in accordance with ANLA Z60.1. The ball shall be of a diameter and depth to encompass enough fibrous and feeding root system necessary for the full recovery of the plant. Removal shall be done by hand digging or mechanical devices. The plant stem or trunk shall be centered in the ball. All roots shall be clean cut at the ball surface. Roots shall not be pulled from the ground. Before shipment the root ball shall be dipped in gels containing mycorrhizal fungi inoculum. Container

shall be used to retain the ball unbroken. Container shall be rigid to hold ball shape and protect root mass during shipping.

2.1.6.3 Balled and Platform (BP) Plant Material

Ball size and ratio shall be in accordance with ANLA Z60.1. Plants shall be prepared as balled and burlapped plant material and securely fastened to wood platform for shipping.

2.1.6.4 Bare-Root (BR) Plant Material

Minimum root spread shall be in accordance with ANLA Z60.1. A well branched root system characteristic of the species specified shall be provided. Roots shall not be pulled from the ground. Bare-root plant material shall be inoculated with mycorrhizal fungi during germination in the nursery. Before shipment the root system shall be dipped in gels containing mycorrhizal fungi inoculum. Bare-root plant material shall be dormant. The root system shall be protected from drying out.

2.1.6.5 Container-Grown (C) Plant Material

Container size shall be in accordance with ANLA Z60.1. Plant material shall be grown in a container over a duration of time for new fibrous roots to have developed and for the root mass to retain its shape and hold together when removed from the container. Container-grown plant material shall be inoculated with mycorrhizal fungi during germination in the nursery. Before shipment the root system shall be dipped in gels containing mycorrhizal fungi inoculum. The container shall be sufficiently rigid to hold ball shape and protect root mass during shipping.

2.1.7 Growth of Trunk and Crown

2.1.7.1 Deciduous Trees

A height to caliper relationship shall be provided in accordance with ANLA Z60.1. Height of branching shall bear a relationship to the size and species of tree specified and with the crown in good balance with the trunk. The trees shall not be "poled" or the leader removed.

a. Single stem: The trunk shall be reasonably straight and symmetrical with crown and have a persistent main leader.

b. Multi-stem: All countable stems, in aggregate, shall average the size specified. To be considered a stem, there shall be no division of the trunk which branches more than 6 inches from ground level.

c. Specimen: The tree provided shall be well branched and pruned naturally according to the species. The form of growth desired, which may not be in accordance with natural growth habit, shall be as indicated.

2.1.7.2 Deciduous Shrubs

Deciduous shrubs shall have the height and number of primary stems recommended by ANLA Z60.1. Acceptable plant material shall be well shaped, with sufficient well-spaced side branches, and recognized by the trade as typical for the species grown in the region of the project.

2.1.7.3 Coniferous Evergreen Plant Material

Coniferous Evergreen plant material shall have the height-to-spread ratio recommended by ANLA Z60.1. The coniferous evergreen trees shall not be "poled" or the leader removed. Acceptable plant material shall be exceptionally heavy, well shaped and trimmed to form a symmetrical and tightly knit plant. The form of growth desired shall be as indicated.

2.1.7.4 Broadleaf Evergreen Plant Material

Broadleaf evergreen plant material shall have the height-to-spread ratio recommended by ANLA Z60.1. Acceptable plant material shall be well shaped and recognized by the trade as typical for the variety grown in the region of the project.

2.1.7.5 Ground Cover and Vine Plant Material

Ground cover and vine plant material shall have the minimum number of runners and length of runner recommended by ANLA Z60.1. Plant material shall have heavy, well developed and balanced crown with vigorous, well developed root system and shall be furnished in containers.

2.1.8 Plant Material Size

Plant material shall be furnished in sizes indicated. Plant material larger in size than specified may be provided at no additional cost to the Government.

2.1.9 Plant Material Measurement

Plant material measurements shall be in accordance with ANLA Z60.1.

2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. Topsoil shall be the existing surface soil stripped and stockpiled onsite in accordance with Section 02300a EARTHWORK FOR ROADWAYS, TRAILS, TARGETS, AND BERMS. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts.

2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite is not recommended.

2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

2.3.2 Fertilizer

The nutrients ratio shall be 13 percent nitrogen, 13 percent phosphorus, and 13 percent potassium. Fertilizer shall be controlled release commercial grade; free flowing, pellet or tablet form; uniform in composition; and consist of a nitrogen-phosphorus-potassium ratio. The

fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer coated pills, or isobutylenediurea (IBDU). Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

2.3.3 Organic Material

Organic material shall consist of topsoil that has been stripped from the existing surface and stockpiled on the site according to Section 02300a EARTHWORK FOR ROADWAYS, TRAILS, TARGETS, AND BERMS.

2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.4.1 Organic Mulch

Organic mulch materials shall be native to the project site and consist of recycled mulch, shredded bark, wood chips, or ground bark.

2.4.1.1 Recycled Mulch

Recycled mulch may include compost, tree trimmings, or pine needles with a gradation that passes through a 2-1/2 x 2-1/2 inch screen. It shall be cleaned of all sticks a minimum 1 inch in diameter and plastic materials a minimum 3 inch length. The material shall be treated to retard the growth of mold and fungi. Other recycled mulch may include peanut shells, pecan shells or coco bean shells.

2.4.1.2 Shredded Bark

Locally shredded material shall be treated to retard the growth of mold and fungi.

2.4.1.3 Wood Chips and Ground Bark

Locally chipped or ground material shall be treated to retard the growth of mold and fungi. Gradation: A maximum 2 inch wide by 4 inch long.

2.5 GEOTEXTILE

Geotextile shall be woven or nonwoven; polypropylene, polyester, or fiberglass, mat in accordance with ASTM D 5034 or ASTM D 5035. It shall be made specifically for use as a fabric around plant material. Nominal weight shall be a minimum 4 ounces per square yard. Permeability rate shall be a minimum 0.04 inch per second.

2.6 WOOD STAKING MATERIAL

Wood stakes shall be hardwood or fir treated with pentachlorophenol rough sawn; free from knots, rot, cross grain, or other defects that would impair their strength.

2.6.1 Bracing Stake

Wood bracing stakes shall be a minimum 2 x 2 inch square and a minimum 8 feet long with a point at one end. Stake shall be set without damaging rootball.

2.6.2 Wood Ground Stakes

Wood ground stakes shall be a minimum of 2 x 2 inch square and a minimum 3 feet long with a point at one end.

2.6.3 Deadmen

Wood deadmen shall be a minimum 4 x 4 x 36 inches long.

2.7 METAL STAKING AND GUYING MATERIAL

Metal shall be aluminum or steel consisting of recycled content made for holding plant material in place.

2.7.1 Bracing Stakes

Metal bracing stakes shall be a minimum 1 inch diameter and a minimum 8 feet long. Stake shall be set without damaging rootball.

2.7.2 Metal Ground Stakes

Metal ground stakes shall be a minimum 1/2 inch diameter and a minimum 3 feet long.

2.7.3 Earth Anchor

Metal earth anchors shall be a minimum 1/2 inch diameter and a minimum 2 feet long.

2.7.4 Guying Material

Metal guying material shall be a minimum 12 gauge wire. Multi-strand cable shall be woven wire. Guying material tensile strength shall conform to the size of tree to be held firmly in place.

2.7.5 Turnbuckle

Metal turnbuckles shall be galvanized or cadmium-plated steel, and shall be a minimum 3 inches long with closed screw eyes on each end. Screw thread tensile strength shall conform to the size of tree to be held firmly in place.

2.8 PLASTIC STAKING AND GUYING MATERIAL

Plastic shall consist of recycled plastic product made for holding plant material firmly in place. Plastic shall not be used for deadmen.

2.8.1 Plastic Bracing Stake

Plastic bracing stakes shall be a minimum 2 inch diameter and a minimum 8 feet long. Stake shall be set without damaging rootball.

2.8.2 Plastic Ground Stakes

Plastic ground stakes shall be a minimum 1 inch diameter and a minimum 3 feet long.

2.8.3 Plastic Guying Material

Plastic guying material shall be designed specifically for the purpose of firmly holding plant material in high wind velocities.

2.8.4 Chafing Guard

Plastic chafing guards shall be used to protect tree trunks and branches when metal is used as guying material. The material shall be the same color throughout the project site. Length shall be a minimum 1.5 times the circumference of the plant trunk at its base.

2.9 FLAG

Plastic flag material shall be used on guying material. It shall be white sureyor's tape a minimum 6 inches long.

2.10 WATER

Water shall not contain elements toxic to plant life. Contractor shall obtain water from new water in this project or from main post. Contractor may also obtain reasonable amounts of water from the river or other on site natural water source as approved by the Contracting Officer.

2.11 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

PART 3 EXECUTION

3.1 INSTALLING PLANT MATERIAL TIME AND CONDITIONS

3.1.1 Deciduous Plant Material Time

Deciduous plant material shall be installed from January to August for spring and summer planting and from August to December for fall planting.

3.1.2 Evergreen Plant Material Time

Evergreen plant material shall be installed from January to August for spring and summer planting and from August to December for fall planting.

3.1.3 Existing Plant Transplanting Time

Existing plants shall be transplanted from January to August for spring and summer planting and from August to December for fall planting.

3.1.4 Plant Material Conditions

Planting operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the planting operations, proposed planting times shall be submitted for approval.

3.2 SITE PREPARATION

3.2.1 Finished Grade, Topsoil and Underground Utilities

The Contractor shall verify that finished grades are as indicated on drawings, and that the placing of topsoil, the smooth grading, and the compaction requirements have been completed in accordance with Section 02300aEARTHWORK FOR ROADWAYS, TRAILS, TARGETS, AND BERMS, prior to the commencement of the planting operation. The location of underground utilities and facilities in the area of the planting operation shall be verified. Damage to underground utilities and facilities shall be repaired at the Contractor's expense.

3.2.2 Layout

Plant material locations and bed outlines shall be staked on the project site before any excavation is made. Plant material locations may be adjusted to meet field conditions.

3.2.3 Protecting Existing Vegetation

When there are established lawns in the planting area, the turf shall be covered and/or protected during planting operations. Existing trees, shrubs, and plant beds that are to be preserved shall be barricaded along the dripline to protect them during planting operations.

3.3 EXCAVATION

3.3.1 Obstructions Below Ground

When obstructions below ground affect the work, shop drawings showing proposed adjustments to plant material location, type of plant and planting method shall be submitted for approval.

3.3.2 Turf Removal

Where the planting operation occurs in an existing lawn area, the turf shall be removed from the excavation area to a depth that will ensure the removal of the entire root system.

3.3.3 Plant Pits

Plant pits for ball and burlapped or container plant material shall be dug to a depth equal to the height of the root ball as measured from the base of the ball to the base of the plant trunk. Plant pits for bare-root plant material shall be dug to a depth equal to the height of the root system. Plant pits shall be dug a minimum 50 percent wider than the ball or root system to allow for root expansion. The pit shall be constructed with sides sloping towards the base as a cone, to encourage well aerated soil to be available to the root system for favorable root growth. Cylindrical pits with vertical sides shall not be used.

3.4 INSTALLATION

3.4.1 Setting Plant Material

Plant material shall be set plumb and held in position until sufficient soil has been firmly placed around root system or ball. In relation to the surrounding grade, the plant material shall be set even with the grade at which it was grown.

3.4.1.1 Bare-Root Plant Material

Bare-root plant material shall be placed in water a minimum 30 minutes prior to setting.

3.4.2 Backfill Soil Mixture

The backfill soil mixture may be a mix of topsoil and soil amendments suitable for the plant material specified. When practical, the excavated soil from the plant pit that is not amended provides the best backfill and shall be used.

3.4.3 Backfill Procedure

Prior to backfilling, all metal, wood, synthetic products, or treated burlap devices shall be removed from the ball or root system avoiding damage to the root system. The backfill procedure shall remove air pockets from around the root system. Additional requirements are as follows.

3.4.3.1 Balled and Burlapped, and Balled and Platformed Plant Material

Biodegradable burlap and tying material shall be carefully opened and folded back from the top a minimum 1/3 depth from the top of the root ball. Backfill mixture shall be added to the plant pit in 6 inch layers with each layer tamped.

3.4.3.2 Bare-Root Plant Material

The root system shall be spread out and arranged in its natural position. Damaged roots shall be removed with a clean cut. The backfill soil mixture shall be carefully worked in amongst the roots and watered to form a soupy mixture. Air pockets shall be removed from around the root system, and root to soil contact shall be provided.

3.4.3.3 Container-Grown and Balled and Potted Plant Material

The plant material shall be carefully removed from containers that are not biodegradeable. Prior to setting the plant in the pit, a maximum 1/4 depth of the root mass, measured from the bottom, shall be spread apart to promote new root growth. For plant material in biodegradable containers the container shall be split prior to setting the plant with container. Backfill mixture shall be added to the plant pit in 6 inch layers with each layer tamped.

3.4.3.4 Earth Berm

An earth berm, consisting of backfill soil mixture, shall be formed with a minimum 4 inch height around the edge of the plant pit to aid in water retention and to provide soil for settling adjustments.

3.4.4 Plant Bed

Backfill soil mixture shall be placed on previously scarified subsoil to completely surround the root balls, and shall be brought to a smooth and even surface, blending to existing areas. Earth berms shall be provided. Polymers shall be spread uniformly over the plant bed and in the planting pit as recommended by the manufacturer and thoroughly incorporated into the soil to a maximum 4 inch depth.

3.4.4.1 Stream Bank Revegetation Plant Bed

Plant material shall be set in low areas 20 feet each side of the edge of the creek bed or typical high water line whichever is greater. The plant beds shall be established in two rows: One row 10 feet from the creek bed, the second row 20 feet from the creek bed. The plants shal be set on five foot centers and staggered between the two rows.

3.4.4.2 **[AM#2]** **Stream and** Wetland Mitigation Area Plant Bed

Plant material shall be set according to the **[AM#2]** **stream and** wetland mitigation plan and applicable permits.

3.4.5 Watering

Plant pits and plant beds shall be watered immediately after backfilling, until completely saturated.

3.4.6 Staking and Guying

Staking will be required when trees are unstable or will not remain set due to their size, shape, or exposure to high wind velocity.

3.4.6.1 One Bracing Stake

Trees 4 to 6 feet high shall be firmly anchored in place with one bracing stake. The bracing stake shall be placed on the side of the tree facing the prevailing wind. The bracing stake shall be driven vertically into firm ground and shall not injure the ball or root system. The tree shall be held firmly to the stake with a double strand of guying material. The guying material shall be firmly anchored at a minimum 1/2 tree height and shall prevent girdling. A chafing guard shall be used when metal is the guying material.

3.4.6.2 Two Bracing Stakes

Trees from 6 to 8 feet height shall be firmly anchored in place with 2 bracing stakes placed on opposite sides. Bracing stakes shall be driven vertically into firm ground and shall not injure the ball or root system. The tree shall be held firmly between the stakes with a double strand of guying material. The guying material shall be firmly anchored at a minimum 1/2 tree height and shall prevent girdling. Chafing guards shall be used when metal is the guying material.

3.4.6.3 Three Ground Stakes

Trees over a minimum 8 feet height and less than a maximum 6 inch caliper shall be held firmly in place with 3 bracing or ground stakes spaced equidistantly around the tree. Ground stakes shall be avoided in areas to be mowed. Stakes shall be driven into firm ground outside the earth berm. The guying material shall be firmly anchored at a minimum 1/2 tree height and shall prevent girdling. For trees over maximum 3 inch diameter at breast height, turnbuckles shall be used on the guying material for tree straightening purposes. One turnbuckle shall be centered on each guy line. Chafing guards shall be used when metal is the guying material.

3.4.7 Deadmen or Earth Anchors

Trees over a minimum 6 inch caliper shall be held firmly in place with wood deadmen buried a minimum 3 feet in the ground or metal earth anchors.

Multi-strand cable guying material shall be firmly anchored at a minimum 1/2 tree height and shall prevent girdling. Turnbuckles shall be used on the guying material for tree straightening purposes. One turnbuckle shall be centered on each guy line. Chafing guards shall be used.

3.4.8 Flags

A flag shall be securely fastened to each guy line equidistant between the tree and the stake, deadmen, or earth anchor. The flag shall be visible to pedestrians.

3.5 FINISHING

3.5.1 Placing Geotextile

Prior to placing mulch, geotextile shall be placed as indicated in accordance with the manufacturer's recommendations.

3.5.2 Placing Mulch

The placement of mulch shall occur a maximum 48 hours after planting. Mulch, used to reduce soil water loss, regulate soil temperature and prevent weed growth, shall be spread to cover the installed area with a minimum 4 inch uniform thickness. Mulch shall be kept out of the crowns of shrubs, ground cover, and vines.

3.5.3 Pruning

Pruning shall be accomplished by trained and experienced personnel. The pruning of trees and palms shall be in accordance with ANSI A300. Only dead or broken material shall be pruned from installed plants. The typical growth habit of individual plant material shall be retained. Clean cuts shall be made flush with the parent trunk. Improper cuts, stubs, dead and broken branches shall be removed. "Headback" cuts at right angles to the line of growth will not be permitted. Trees shall not be poled or the leader removed, nor shall the leader be pruned or "topped off".

3.6 MAINTENANCE DURING PLANTING OPERATION

Installed plant material shall be maintained in a healthy growing condition. Maintenance operations shall begin immediately after each plant is installed to prevent desiccation and shall continue until the plant establishment period commences. Installed areas shall be kept free of weeds, grass, and other undesired vegetation. The maintenance includes maintaining the mulch, watering, and adjusting settling.

3.7 APPLICATION OF PESTICIDE

When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be submitted and coordinated with the installation pest management program.

3.7.1 Technical Representative

The certified installation pest management coordinator shall be the technical representative, and shall be present at all meetings concerning treatment measures for pest or disease control. They may be present during treatment application.

3.7.2 Application

A state certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations. Clothing and personal protective equipment shall be used as specified on the pesticide label. A closed system is recommended as it prevents the pesticide from coming into contact with the applicator or other persons. Water for formulating shall only come from designated locations. Filling hoses shall be fitted with a backflow preventer meeting local plumbing codes or standards. Overflow shall be prevented during the filling operation. Prior to each day of use, the equipment used for applying pesticide shall be inspected for leaks, clogging, wear, or damage. Any repairs are to be performed immediately.

3.8 RESTORATION AND CLEAN UP

3.8.1 Restoration

Turf areas, pavements and facilities that have been damaged from the planting operation shall be restored to original condition at the Contractor's expense.

3.8.2 Clean Up

Excess and waste material shall be removed from the installed area and shall be disposed offsite. Adjacent paved areas shall be cleared.

3.9 PLANT ESTABLISHMENT PERIOD

3.9.1 Commencement

Upon completion of the last day of the planting operation, the plant establishment period for maintaining installed plant material in a healthy growing condition shall commence and shall be in effect for the remaining contract time period, not to exceed 12 months for stream bank revegetation areas. Wetland mitigation area planting require a 5-year monitoring period by Ft. Knox EMD. All maintenance, watering, pesticide, treatment, settling, record keeping, replacement and final inspection for the wetland mitigation area shall follow the wetland mitigation plan. Written calendar time period shall be furnished for the plant establishment period. When there is more than one plant establishment period, the boundaries of the planted area covered for each period shall be described. The plant establishment period shall be coordinated with Sections 02921a SEEDING. The plant establishment period shall be modified for inclement weather shut down periods, or for separate completion dates for areas.

3.9.2 Maintenance During Establishment Period

Maintenance of plant material shall include straightening plant material, straightening stakes; tightening guying material; correcting girdling; supplementing mulch; pruning dead or broken branch tips; maintaining plant material labels; watering; eradicating weeds, insects and disease; post-fertilization; and removing and replacing unhealthy plants.

3.9.2.1 Watering Plant Material

The plant material shall be watered as necessary to prevent desiccation and to maintain an adequate supply of moisture within the root zone. An adequate supply of moisture is estimated to be the equivalent of 1 inch absorbed water per week, delivered in the form of rain or augmented by

watering. Run-off, puddling and wilting shall be prevented. Unless otherwise directed, watering trucks shall not be driven over turf areas. Watering of other adjacent areas or existing plant material shall be prevented.

3.9.2.2 Weeding

Grass and weeds in the installed areas shall not be allowed to reach a maximum 3 inches height before being completely removed, including the root system.

3.9.2.3 Pesticide Treatment

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

3.9.2.4 Plant Pit Settling

When settling occurs to the backfill soil mixture, additional backfill soil shall be added to the plant pit or plant bed until the backfill level is equal to the surrounding grade. Serious settling that affects the setting of the plant in relation to the maximum depth at which it was grown requires replanting in accordance with paragraph INSTALLATION. The earth berm shall be maintained.

3.9.2.5 Maintenance Record

A record shall be furnished describing the maintenance work performed, the quantity of plant losses, diagnosis of the plant loss, and the quantity of replacements made on each site visit.

3.9.3 Unhealthy Plant Material

A tree shall be considered unhealthy or dead when the main leader has died back, or up to a maximum 25 percent of the crown has died. A shrub shall be considered unhealthy or dead when up to a maximum 25 percent of the plant has died. This condition shall be determined by scraping on a branch an area 1/16 inch square, maximum, to determine if there is a green cambium layer below the bark. The Contractor shall determine the cause for unhealthy plant material and shall provide recommendations for replacement. Unhealthy or dead plant material shall be removed immediately and shall be replaced as soon as seasonal conditions permit.

3.9.4 Replacement Plant Material

Unless otherwise directed, plant material shall be provided for replacement in accordance with paragraph PLANT MATERIAL. Replacement plant material shall be installed in accordance with paragraph INSTALLATION, and recommendations in paragraph PLANT ESTABLISHMENT PERIOD. Plant material shall be replaced in accordance with paragraph WARRANTY. An extended plant establishment period shall not be required for replacement plant material.

3.10 FINAL ACCEPTANCE

3.10.1 Preliminary Inspection

Prior to the plant establishment period a preliminary inspection shall be held by the Contracting Officer. Time for the inspection will be established in writing. The quantity and type of plants installed and the

acceptability of the plants in accordance with the plant establishment period shall be determined.

3.10.2 Final Inspection

A final inspection shall be held by the Contracting Officer to determine that deficiencies noted in the preliminary inspection have been corrected. Time for the inspection shall be established in writing. Acceptance of the planting operation is subject to the guarantee of plant growth.

APPENDIX

APPLICATION FOR SECTION 404 PERMIT AND SECTION 401 WATER QUALITY CERTIFICATION

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 08 - DOORS & WINDOWS

SECTION 08330A

OVERHEAD ROLLING DOORS

AMENDMENT NO. 2

-- End of Section Table of Contents --

SECTION 08330A

OVERHEAD ROLLING DOORS
AMENDMENT NO. 2

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 653/A 653M	(1999a) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip process
ASTM E 84	(1999) Surface Burning Characteristics of Building Materials
ASTM E 330	(1997el) Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE HDBK-IP	(1997) Handbook, Fundamentals I-P Edition
ASHRAE HDBK-SI	(1997) Handbook, Fundamentals SI Edition

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA ICS 2	(1993) Industrial Control and Systems Controllers, Contactors, and Overload Relays Rated Not More Than 2,000 Volts AC or 750 Volts DC
NEMA ICS 6	(1993) Industrial Control and Systems Enclosures
NEMA MG 1	(1998) Motors and Generators

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(1999) National Electrical Code
NFPA 80	(1999) Fire Doors and Fire Windows

1.2 DESCRIPTION

Overhead rolling doors shall be spring counterbalanced, rolling type, with interlocking slats, complete with guides, fastenings, hood, brackets, and

operating mechanisms, and shall be designed for use on openings as indicated. Fire doors shall bear the Underwriters Laboratories, Warnock Hersey, Factory Mutual or other nationally recognized testing laboratory label for the rating listed on the drawings. Each door shall be provided with a permanent label showing the manufacturer's name and address and the model/serial number of the door. Doors in excess of the labelled size shall be deemed oversize and shall be provided with a listing agency oversize label, or a listing agency oversize certificate, or a certificate signed by an official of the manufacturing company certifying that the door and operator have been designed to meet the specified requirements.

1.2.1 Wind Load Requirements

Doors and components shall be designed to withstand the minimum design wind load of 20 psf Doors shall be constructed to sustain a superimposed load, both inward and outward, equal to 1-1/2 times the minimum design wind load. Calculations shall be provided that prove the door design meets the design windload requirements. Test data showing compliance with design windload requirements for the specific door design tested in accordance with the uniform static air pressure difference test procedures of ASTM E 330 shall be provided. Recovery shall be at least 3/4 of the maximum deflection within 24 hours after the test load is removed. Sound engineering principles may be used to interpolate or extrapolate test results to door sizes not specifically tested

1.2.2 Operational Cycle Life

All portions of the door and door operating mechanism that are subject to movement, wear, or stress fatigue shall be designed to operate through a minimum number of 10 cycles per day. One complete cycle of door operation is defined as when the door is in the closed position, moves to the full open position, and returns to the closed position.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Overhead Rolling Door Unit; G, .

Drawings showing the location of each door including schedules. Drawings shall include elevations of each door type, details and method of anchorage, details of construction, location and installation of hardware, shape and thickness of materials, details of joints and connections, and details of guides, power operators, controls, and other fittings.

SD-03 Product Data

Overhead Rolling Door Unit; G, .

Manufacturer's catalog data, test data, and summary of forces and loads on the walls/jambs.

Manufacturer's preprinted installation instructions.

SD-06 Test Reports

Tests; G, .

Written record of fire door drop test.

SD-04 Samples

Overhead Rolling Door Unit; G, .

Manufacturer's standard color samples of factory applied finishes.

SD-07 Certificates

Fire Doors; G, .

Oversize labels or certificates stating that the overhead rolling doors conform to requirements of this section. Certificates for oversize fire doors stating that the doors and hardware are manufactured in compliance with the requirements for doors of this type and class and have been tested and meet the requirements for the class indicated. Certificate is not required when fire door has a listing agency label or oversize label on the door bottom bar.

SD-10 Operation and Maintenance Data

Operation Manual; G, .

Maintenance and Repair Manual; G, .

Six copies of the system operation manual and system maintenance and repair manual for each type of door and control system.

1.4 DELIVERY AND STORAGE

Doors shall be delivered to the jobsite wrapped in a protective covering with the brands and names clearly marked thereon. Doors shall be stored in a dry location that is adequately ventilated and free from dirt and dust, water, and other contaminants, and in a manner that permits easy access for inspection and handling.

1.5 WARRANTY

Manufacturer's standard performance guarantees or warranties that extend beyond a 1-year period shall be provided.

1.6 OPERATION AND MAINTENANCE MANUALS

Operating instructions outlining the step-by-step procedures required for motorized door and shutter operation for the overhead rolling door unit shall be provided. The instructions shall include the manufacturer's name, model number, service manual, parts list, and brief description of all equipment and their basic operating features. Maintenance instructions listing routine maintenance procedures, possible breakdowns and repairs, troubleshooting guides, and simplified diagrams for the equipment as installed shall be provided. A complete list of parts and supplies, source of supply, and a list of the high mortality maintenance parts shall be

provided.

PART 2 PRODUCTS

2.1 OVERHEAD ROLLING DOORS

Doors shall be surface-mounted type with guides at jambs set back a sufficient distance to clear the opening. Exterior doors shall be mounted as indicated.

2.1.1 Curtains

The curtains shall roll up on a barrel supported at the head of opening on brackets, and shall be balanced by helical torsion springs. stainless steel slats for doors 21 feet wide and wider shall be minimum bare metal thickness of 0.0438 inches. **[AMD #2]**_____. Slats shall be of the minimum bare metal decimal thickness required for the width indicated and the wind pressure specified above. Slats for fire doors over 12 feet wide and under 20 feet wide shall be not less than 0.0329 inches steel. Slats for fire doors 20 feet wide or wider shall be not less than 0.0438 inches steel.

2.1.1.1 Non-Insulated Curtains

Curtains shall be formed of interlocking slats of shapes standard with the manufacturer. Slats for exterior doors shall be flat type.

2.1.1.2 Insulated Curtains

The slat system shall supply a minimum R-value of 4 when calculated in accordance with ASHRAE HDBK-IP ASHRAE HDBK-SI. Slats shall be of the flat type as standard with the manufacturer. Slats shall consist of a urethane core not less than 11/16 inch thick, completely enclosed within metal facings. Exterior face of slats shall be gauge as specified for curtains. Interior face shall be not lighter than 0.0219 inches. The insulated slat assembly shall have a flame spread rating of not more than 25 and a smoke development factor of not more than 50 when tested in accordance with ASTM E 84.

2.1.2 Endlocks and Windlocks

The ends of each alternate slat for interior doors shall have steel endlocks of manufacturer's stock design. Endlocks shall be provided in accordance with manufacturer's listing on fire doors when required by test results performed by the code listing agency. In addition to endlocks, non-rated exterior doors shall have the manufacturer's standard windlocks as required to withstand the wind load. Windlocks shall prevent the curtain from leaving guides because of deflection from specified wind pressure.

2.1.3 Bottom Bar

The curtain shall have a standard bottom bar consisting of two hot-dip galvanized steel angles for steel doors. A sensing edge shall be attached to the bottom bar of doors that are electric-power operated.

2.1.4 Guides

Guides shall be steel structural shapes or formed steel shapes, of a size

and depth to provide proper clearance for operation and resistance under the design windload. Guides shall be attached to adjoining construction with fasteners recommended by the manufacturer. Spacing of fasteners shall be as required to meet the minimum design windload. Doors and guides in hazardous areas shall have static grounding.

2.1.5 Barrel

The barrel shall be steel pipe or commercial welded steel tubing of proper diameter for the size of curtain. Deflection shall not exceed 0.03 inch per foot of span. Ends of the barrel shall be closed with metal plugs, machined to fit the pipe. Aluminum plugs are acceptable on non-fire door barrels.

2.1.6 Springs

Oil tempered helical steel counter-balance torsion springs shall be installed within the barrel and shall be capable of producing sufficient torque to assure easy operation of the door curtain. Access shall be provided for spring tension adjustment from outside of the bracket without removing the hood.

2.1.7 Brackets

Brackets shall be of steel plates to close the ends of the roller-shaft housing, and to provide mounting surfaces for the hood. An operation bracket hub and shaft plugs shall have sealed prelubricated ball bearings.

2.1.8 Hoods

Hoods shall be steel **[AMD #2]**_____ with minimum bare metal thickness of 0.0219 inches formed to fit contour of the end brackets, and shall be reinforced with steel rods, rolled beads, or flanges at top and bottom edges. Multiple segment and single piece hoods shall be provided with support brackets of the manufacturer's standard design as required for adequate support.

2.1.8 Weatherstripping

Exterior doors shall be fully weatherstripped. A compressible and replaceable weather seal shall be attached to the bottom bar. Weather seal at door guides shall be continuous vinyl or neoprene, bulb or leaf type, or shall be nylon-brush type. A weather baffle shall be provided at the lintel or inside the hood. Weatherstripping shall be easily replaced without special tools.

2.1.9 Operation

[AMD #2]Doors shall be operated by electric power operator with auxilliary chain hoist operator. Equipment shall be designed and manufactured for usage in non-hazardous.

2.1.9.1 **[AMD #2] DELETED**

2.1.9.2 Electric Power Operator With Auxiliary Chain Hoist Operation

Electric power operators shall be heavy-duty industrial type. The unit shall operate the door through the operational cycle life specified. The electric power operator shall be complete with electric motor, auxiliary

operation, necessary means of reduction for medium-duty doors, brake, mounting brackets, push button controls, limit switches, magnetic reversing starter, and all other accessories necessary to operate components specified in other paragraphs of this section. The operator shall be so designed that the motor may be removed without disturbing the limit-switches settings and without affecting the emergency chain operator. Doors shall be provided with an auxiliary operator for immediate emergency manual operation of the door in case of electrical failure. Auxiliary operation shall be by means of galvanized endless chain extending to within 3 feet of the floor. The emergency manual operating mechanism shall be so arranged that it may be operated from the floor without affecting the settings of the limit switches. A mechanical device shall be included that will disconnect the motor from the drive operating mechanism when the auxiliary operator is used. Where control voltages differ from motor voltage, a control voltage transformer shall be provided in and as part of the electric power operator system. Control voltage shall not exceed 120 volts.

a. Motors: Drive motors shall conform to NEMA MG 1, shall be high-starting torque, reversible type, and shall be of sufficient horsepower and torque output to move the door in either direction from any position at a speed range of 6 to 8 inches per second without exceeding the rated capacity. Motors shall be suitable for operation on volts, 60 hertz, single phase current and shall be suitable for across-the-line starting. Motors shall be designed to operate at full capacity over a supply voltage variation of plus or minus 10 percent of the motor voltage rating. Motors shall be provided with overload protection.

b. Controls: Control equipment shall conform to NEMA ICS 2. Enclosures shall conform to NEMA ICS 6, Type 12 (industrial use), Type 7 or 9 in hazardous locations, in accordance with NFPA 70. Exterior control stations shall be weatherproof key-operated type with corrosion-resistant cast-metal cover. Each control station shall be of the three position button or switch type, marked "OPEN," "CLOSE," and "STOP." The "OPEN" and "STOP" controls shall be of the momentary contact type with seal-in contact. The "CLOSE" control shall be of the momentary contact type. When the door is in motion and the "STOP" control is pressed, the door shall stop instantly and remain in the stop position; from the stop position, the door shall be operable in either direction by the "OPEN" or "CLOSE" controls. Controls shall be of the full-guarded type to prevent accidental operation. Readily adjustable limit switches shall be provided to automatically stop the doors at their fully open and closed positions.

c. Sensing Edge Device: The bottom edge of electric power operated doors shall have a pneumatic sensing edge for non-hazardous areas that will reverse the door movement upon contact with an obstruction and cause the door to return to its full open position. The sensing edge shall not substitute for a limit switch. Exterior doors shall be provided with a combination compressible weather seal and sensing edge.

d. Electrical Work: Conduit and wiring necessary for proper operation shall be provided under Section 16415A ELECTRICAL WORK, INTERIOR. Flexible connections between doors and fixed supports shall be made with flexible type SJO cable, except in hazardous locations where wiring shall conform to NFPA 70, as appropriate. The cable shall have a spring-loaded automatic take up reel or a coil cord equivalent device.

2.1.10 Inertia Brake

Overhead rolling door shall have a mechanical inertia brake device which will stop the door from free fall in any position, should there be a failure in the motor operator brake or roller chain drive. The unit shall be capable of being reset with a back drive action.

2.1.11 Finish

Steel slats and hoods shall be hot-dip galvanized G60 in accordance with ASTM A 653/A 653M, and shall be treated for paint adhesion and shall receive a factory baked-on prime coat for field finishing. The paint system shall withstand a minimum of 1500 hours without blistering, bubbling, or rust. **[AMD #2]**_____**.** Surfaces other than slats, hood, and faying surfaces shall be cleaned and treated to assure maximum paint adherence and shall be given a factory dip or spray coat of rust inhibitive metallic oxide or synthetic resin primer. Color shall be as selected.

2.2 FIRE DOORS

Fire rated rolling doors shall be provided at locations shown on the drawings. Fire doors shall conform to the requirements specified herein and to NFPA 80 for the class indicated. Doors shall bear the label or oversize label, or be provided with oversize certification of a recognized testing agency indicating the listed rating for the fire door. The construction details necessary for the listed rating shall take precedence over conflicting details shown or specified herein. Fire doors shall be complete with hardware, accessories, and automatic closing device. An automatic closing device shall operate upon the fusing of a 165 degree F replaceable fusible link.

PART 3 EXECUTION

3.1 INSTALLATION

Doors shall be installed in accordance with approved detail drawings and manufacturer's instructions. Anchors and inserts for guides, brackets, motors, hardware, and other accessories shall be accurately located. Upon completion, doors shall be free from warp, twist, or distortion. Doors shall be lubricated, properly adjusted, and demonstrated to operate freely. Fire doors shall be installed in conformance with the requirements of NFPA 80 and the manufacturer's instructions.

3.2 FIELD PAINTED FINISH

Steel doors and frames shall be field painted in accordance with Section 09900A PAINTING, GENERAL. Weatherstrips shall be protected from paint. Finish shall be free of scratches or other blemishes. Color shall be as selected.

3.3 TESTS

The fire doors shall be drop tested in accordance with NFPA 80 to show proper operation and full automatic closure and shall be reset in accordance with the manufacturer's instructions. A written record of initial test shall be provided to the Contracting Officer.

-- End of Section --

RESPONSE TO CONTRACTOR QUESTIONS FROM 5 SEPTEMBER 2002 SITE VISIT

Question 1: Sheet C-44 shows Power Center outside clearing limits. Sheet E-9 shows Power Center inside clearing limits. Which is correct?
Answer 1: The emplacement for the power center shall be built according to Sheet C-44 and the coordinate chart given on E-7. Approximately 2 acres of additional clearing will be required to construct the emplacement and required trenching.

Question 2: Sheet E-48 indicates an externally mounted surge protector symbol SS. Sheet E-41 SAT target indicates an internally mounted surge protector installed in the load center.
Answer 2: We will make changes to the drawings for the following info. A different symbol will be used for the internally mounted arrester and will be added to the legend. Here is the change:

a. The 120/240 Volt, 1-phase, 3-wire Transient Voltage Surge Protection described in the legend on sheet E-48, shall be externally mounted at the power center panel boards indicated on the power distribution single line diagram on sheet E-42.
b. The Surge Arrester indicated on sheet E-41, shall be a plug-on type that takes two 1-pole circuit breaker spaces in the load center at the target emplacements only. The Surge Arrester shall have a surge capacity of 27,000amps per phase, a maximum continuous operating voltage of 150VAC phase-to-neutral, a clamping voltage of 500Volts, and a short circuit current rating of 22,000amps rms symmetrical at 240Volts.

Question 3: Sheet E-48 has a note that says Pad by Owner for the emergency generator.
Answer 3: The Pad will be constructed under this contract according to Sheet C-96.

Question 4: Sheet E-20 shows a line diagram indicating 9 Range Limit Markers. Only eight can be found. Assume that PC-12 is the one missing.
Answer 4: There are only eight Range Limit Markers. See Sheets C-1, C-2 and C-3 for coordinate points of each Range Limit Marker.

Question 5: There is a detail for a Low Water Creek Crossing but none are shown on the drawings. Where do we use this detail?
Answer 5: Assume Contractor's are referring to the Water Crossing and Geogrid Detail shown on Sheet C-25. Also on Sheet C-25 is a location chart giving the road name, beginning station and ending station for where to construct this detail. Also reference Specification Section 02375a Paragraph 3.1.3, the paragraph should read that the detail is shown on C-25 not C-8. This Specification gives further clarification of where and how to construct the Water Crossings.